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# Canada's Export Development Plan for **BRAZIL**



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CANADA'S  
EXPORT DEVELOPMENT PLAN FOR BRAZIL





## FOREWORD

Canada's Market Development Plan for Brazil has been prepared to assist those in the public and private sectors interested in expanding business in Brazil. The assessments and proposals it contains are the basis for the Department of External Affairs' marketing activities in Brazil over the next two to three years. The provincial governments which play an integral role in the trade process, as well as federal departments with an international focus, have been consulted in preparation of the plan. The plan does not attempt to cover Canadian interests or Brazilian opportunities exhaustively. Rather, it highlights significant sector opportunities that are consistent with Canadian supply capabilities. As the report is updated, additional sectors may be analyzed and included as warranted in the revised editions.

The material presented is divided into specific sections that may interest different audiences. The Executive Summary is provided as an overview of Canadian/Brazilian trade relations and summarizes the separate sector strategies in a detailed action plan. Sections of a general nature concerning bilateral Canada-Brazil relationships and socio-economic and political conditions in Brazil may be particularly useful to the reader seeking a broad introduction to the Canada-Brazil trade environment. The detailed analysis of the priority sectors will be of particular interest to the private sector. The sector pieces were developed in cooperation with the industry sector branches of the Department of Regional Industrial Expansion and this department will be involved in certain elements of the action plan.





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## CONTENTS

	<u>PAGE</u>
<u>EXECUTIVE SUMMARY</u> .....	i
<u>SUMMARIZED ACTION PLAN FOR BRAZIL</u> .....	v
I. <u>MARKET OVERVIEW</u>	
Objective .....	1
The Canadian/Brazilian Environment .....	3
Characteristics of the Brazilian Market .....	5
Canada-Brazil Trade and Economic Relations .....	19
Canadian Trade Development Instruments for Brazil .....	23
II. <u>MARKET OPPORTUNITIES AND SECTOR MARKETING PLANS</u>	
Priority Sector Identification .....	29
Aerospace .....	31
Telecommunications .....	39
Ocean Industries .....	47
Chemical and Pharmaceutical Products .....	53
Agricultural and Food Products .....	61
Minerals .....	75
 <u>Tables and Figures</u> .....	 83-101





## EXECUTIVE SUMMARY AND ACTION PLAN



## EXECUTIVE SUMMARY

### Objective

This export development plan on Brazil is one in a series of plans now being completed by the Department of External Affairs to better focus and co-ordinate Canada's export marketing efforts. The development of these plans is a central element in the Federal Government's export strategy for the 1980s. Each plan recognizes the critical role of the private sector and invites its participation and that of the provinces in pursuing those activities that will contribute to expanding Canada's exports to these markets.

A summary of the strategy or framework to assist the federal government in allocating resources for market development in Brazil and to co-ordinate its activities with those of the provincial governments and the private sector is included in the Action Plan which follows the Executive Summary. The plan is designed to capitalize on opportunities and to overcome constraints affecting Canadian exports. As such, it includes recommendations arising from the priority sector action plans. Sector-specific initiatives are dealt with in the sections devoted to individual industry sectors.

Trade fairs and missions for 1982/83 have been planned in accordance with the expected allocation of funds for market development activities in Brazil. Other activities and also trade fairs and missions proposed in subsequent years are suggested as a response to an identified need and will be more closely evaluated in terms of budgetary considerations at a later date. Additions and/or deletions for these subsequent years may be made as a result of ongoing inter-departmental discussions and consultations with the provinces and the private sector.

### Introduction

Canada and Brazil share a long history of economic involvement and the common opportunities and constraints of vast, resource rich nations. In international fora, both countries have been key proponents of increased North-South dialogue. Brazil, as a newly industrialized country, will often be competing with Canada in world markets. At the same time, as Latin America's largest economic power, its substantial industrial growth and its future development plans offer many opportunities to Canadian firms. However Brazil, with a complex and restrictive import regime, does not represent an easy market for the inexperienced exporter.

### Canadian Trade Development Efforts to Date

In recent years, efforts to enhance Canadian exports have been supported by a number of official visits to Brazil: the Prime Minister in January, 1981, and the Minister of State for Trade in December, 1981. Recent high-level political and economic visits

were made by the Secretary of State for External Affairs and the Minister of Communications. The signing of a three-year wheat agreement by the Canadian Wheat Board in 1980 guaranteed significant export sales of that commodity. The Joint Economic Committee was established in 1976 as a forum to foster commercial as well as developmental endeavours and to neutralize trade irritants, and it met for the fourth time in March, 1982.

In 1980, two-way trade exceeded \$1 billion and Brazil emerged as Canada's largest export market in Latin America and this trade milestone was again exceeded in 1981. Although the majority of Canadian exports are in agricultural and semi-manufactured commodities, significant opportunities exist for the export of manufactured goods.

Canadian investment in Brazil dates back to the 19th century and joint ventures and licensing are even more significant today as alternatives to direct exports. Foreign investment through joint ventures and licensing is encouraged by the Brazilians who wish to upgrade their work force and domestic production base, and deserves serious consideration by Canadian entrepreneurs.

The fact that the Canadian Government maintains three trade offices in Brazil is consistent with the commercial importance of this country to Canada. The Program for Export Market Development and the Promotional Projects Program of Industry, Trade and Commerce have supported many private initiatives in the Brazilian market. The Export Development Corporation has also provided financing to support many of these activities. EDC, in addition to actively promoting its regular programs and services, is negotiating lines of credit with several Brazilian financial institutions, various state agencies and electrical utilities.

Brazil has also benefited from technical co-operation provided by such organizations as the Canadian International Development Agency (CIDA) and Canadian Executive Service Overseas. In addition, CIDA's Industrial Co-operation Program has been very active supporting Canadian private firms able to supply Brazil with the appropriate technology for its needs.

Finally, non-government organizations such as the Brazil-Canada Chamber of Commerce and the Canadian Association - Latin America and Caribbean have helped create the kind of framework that is conducive to furthering business between Canada and Brazil.

#### Future Market Opportunities

The Third National Development Plan (PND III), 1980-1985, outlines the sectors of the Brazilian economy which have been selected for priority attention in the context of Brazil's growth

strategy. These sectors will be allowed greater access to imports in order to achieve their stated objectives. The industry sectors included in this export development plan were, therefore, chosen to match Canadian supply capability with these Brazilian priorities.

Brazil's agricultural sector, is planned to grow at a faster rate than the industrial sector. In order to accomplish this, modern farming methods employing fertilizers will need to be employed. This should stimulate demand for potash and sulphur, two key ingredients in the manufacture of fertilizers. Opportunities for the sale of livestock and genetic material will also be available, as well as an opportunity to maintain or expand Canada's large share of Brazil's wheat imports.

The energy sector and particularly petroleum exploration and development have also been given priority by the Brazilians in order to reduce the outflow of foreign exchange needed to pay their oil import bills. Goods and services for ocean industries, including exploration, sub-sea well heads, supply boats, and semi-submersible rigs are a few of the products that Canada might sell to this sector.

Another priority of the Brazilian Government is the promotion of export industries. Canada's aerospace industry has supplied the Brazilian industry with aircraft engines and sub-assembly systems which have been incorporated in Brazilian-made aircraft and re-exported. Opportunities are good for further co-operation in this area. Similarly the Brazilians are hoping to further develop their resource sector to increase exports. For this reason minerals, in particular, offer good investment opportunities in Brazil.

Finally, the Brazilians have realized a need to improve their telecommunications sector and Canada is well-equipped to respond to specific opportunities in this sector.

Marketing plans have been developed on the basis of an analysis of the opportunities, impediments and competition in each of the industry sectors included in Part II of this Plan. The following priority sectors appear to offer the most significant trade prospects for Canada in the years ahead:

- Aerospace
- Telecommunications
- Ocean Industries
- Chemical and Pharmaceutical Products
- Agricultural and Food Products
- Minerals

Notwithstanding the priority emphasis being proposed for these sectors, the government will continue to give support through its regular programs to activities in any sector that will contribute to export development.



While Brazil offers promising long-term market potential, the competition is increasing rapidly. The United States, Japan, EEC, and Latin American countries are all actively pursuing increased market shares and will continue to provide strong competition for Canadian exporters.

### The Overall Strategy

The market development plan for Brazil consists of a range of new and existing trade instruments which will be used by the Federal Government to assist Canadian exporters in increasing their penetration of the Brazilian market.

Trade development activities undertaken by Canadian government trade offices in Brazil will involve: identification of opportunities; efforts to increase Brazilian awareness of the capabilities resident in Canadian firms; studies of the Brazilian import regime; and intelligence reports on competitor activity. Publicity by the Brazil-Canada Chamber of Commerce and the Canadian Association - Latin America and Caribbean in Canada should reinforce interest in pursuing the Brazilian market.

Continued use of the Fairs and Missions Program is planned. The appropriate frequency of ministerial and other high level government-to-government visits will be encouraged. The PEMD program, with its increased funding, will be promoted more intensively. This applies particularly to Section F which can help a company sustain the ongoing analysis and market development activities necessary to succeed in Brazil, and to Section C which assists companies in participating in foreign trade fairs.

Effort will be made to expand the use of the Industrial Co-operation program of CIDA, particularly in concert with Canada's export market development activities in Brazil. Other activities and events will be considered for trade development in Brazil as needs arise.

The primary parts of the Department of External Affairs responsible for the Brazil export marketing plan are the two trade and foreign policy Bureaux of Latin America and Caribbean Affairs, the Posts in Brazil and in sector-specific areas, selected Industry Branches of the former ITC. However, the degree of success in meeting the objectives of the plan depends upon the co-ordination and co-operation of all federal government departments and provincial governments and active involvement by business and industry. Consultation in the formulation of strategy with the provinces, and with other government departments has therefore taken place. Ongoing consultations by External Affairs officials with businessmen and associations have ensured that private sector views have been incorporated into the plan. Given this co-ordination, there is every reason to expect that Canada's trade objective in Brazil will be achieved.



SUMMARIZED ACTION PLAN FOR BRAZIL

<u>ONGOING</u>	<u>ACTIVITIES/EVENTS</u>	<u>PRIME RESPONSIBILITY CENTRE(S)</u>
	Arrange visits of leading Brazilian political figures to Canada	EA
	Promote CIDA Industrial Co-operation Program and PEMD Sections F and C to Canadian companies	EA/CIDA
	Seek commercial opportunities from CIDA's activities in Brazil, particularly in the fields of Agricultural and Health Care Education	Posts/CIDA
	Disseminate information on commercial opportunities in Brazil through Canada Commerce, the Brazil-Canada Chamber of Commerce (BCCC) and the Canadian Association Latin America (CALA)	EA/BCCC/CALA
	Complete negotiations for a Bilateral Tax Treaty between Canada and Brazil	Finance
	Monitor ocean freight rates and frequency of service between Canada and Brazil	EA
	Encourage the use of the Joint Economic Committee (JEC) and its related subgroups as fora for discussion of commercial opportunities	EA
	Assess Brazilian involvement in capital projects in third countries and opportunities for Canadian participation	Posts/EA
	Identify opportunities for and Promotion of Telidon in Brazil	Posts
<u>1982/1983</u>	Distribute publication "Joint Business Ventures in Brazil: A Canadian Perspective"	EA
	Prepare for visit to Canada by Brazil's President, Joao Figueiredo	EA
	Visit to Brazil by Secretary of State for External Affairs, M. MacGuigan	EA

SUMMARIZED ACTION PLAN FOR BRAZIL

<u>1982/1983</u> (cont'd)	<u>ACTIVITIES/EVENTS</u>	<u>PRIME RESPONSIBILITY CENTRE(S)</u>
	Prepare for meeting of the Joint Economic Committee (JEC) in Brazil	EA
	Publish Opportunities for Canadian Joint Ventures in Brazil and How to do Business in Brazil	CIDA/BCCC
	Prepare for visit to Canada by Brazil's Planning Minister, Delfim Netto	EA
	Visit to Brazil by Department of Communications (DOC) Minister, Francis Fox	DOC/EA
	Prepare for meeting of Industrial Sub-Committee of JEC in Brazil	EA
	Prepare for meeting of Agricultural Sub-Committee of JEC in Brazil	AGR
	Prepare for TEC CAN '82 Show in Sao Paulo	CIDA
	Complete study on How to Facilitate Imports through Brazil's Import Regime	Posts
	Train Brazilian industrial representatives in Canadian International Grains Institute (CIGI) programs	Posts/EA
	Promote lines of credit with Brazilian institutions, utilities and state agencies, as well as marketing EDC's various programs and services to the private and public sectors	EDC/Posts
	Promote Canadian representation at Porto Alegre Livestock Show	Posts/EA
	Promote Canadian representation at the Latin American Oil Show	Posts

SUMMARIZED ACTION PLAN FOR BRAZIL

<u>1983/1984</u>	<u>ACTIVITIES/EVENTS</u>	<u>PRIME RESPONSIBILITY CENTRE(S)</u>
	Prepare a study of Brazil's aerospace capabilities and opportunities for Canadian supply of goods and services.	Posts/EA
	Prepare Ocean Industries Mission to Brazil	EA/Posts
	Prepare Salt Fish Mission to South America	EA/Posts
	Prepare for Canadian representation at Porto Alegre Livestock Show	EA/Posts
	Prepare for Canadian representation at the Latin American Oil Show	EA/Posts
	Prepare Malting Barley Mission to Brazil	EA/Posts



## I. MARKET OVERVIEW





## OBJECTIVE

The introduction of greater focus and co-ordination to Canada's marketing efforts is the major theme of a "Canadian Export Strategy for the 1980s" approved by the Cabinet Committee on Economic Development. The elaboration of two- to three-year marketing plans for Canada's priority markets is a central element of the strategy. This paper sets out an export development plan for Brazil through:

- creating a strategy framework to guide the actions and resources of the federal government in providing an effective program of assistance to and an environment for Canadian export development in Brazil;
- elaborating a marketing plan to take advantage of the opportunities and to overcome the constraints facing Canadian exports to Brazil;
- providing a working document to use as the basis for discussions aimed at co-ordinating the marketing efforts of the federal government in co-operation with provincial governments and the private sector.

The major Canadian trade objectives in Brazil are:

1. to ensure an environment which will encourage the strengthening of the Canadian presence in Brazil's growing economy;
2. to increase exports of goods and services at a rate sufficient to maintain or improve Canada's market share; and,
3. to pursue opportunities for investment, joint ventures and other forms of commercial co-operation.

From the federal government's perspective, a strategy vis-à-vis Brazil requires efforts on three fronts:

- a. helping exporters to take advantage of a strong political relationship between Brazil and Canada. This is particularly important in light of the fact that the Brazilian government is responsible for more than 60 per cent of investment in the country and has a controlling share in many companies in the sectors identified as important to Canada;

- b. overcoming obstacles to expanded Canadian exports and investment in Brazil. The import regime offers maximum protection to domestic industries, and government incentives encourage domestic industrial development thus limiting most export opportunities to industry sectors in which Brazilian capability is not extensively developed; and,
- c. supporting marketing efforts of Canadian firms in pursuing opportunities, particularly in the priority sectors identified.

## THE CANADIAN/BRAZILIAN ENVIRONMENT

Brazil has emerged as the major industrial power of Latin America. It is converting its industrial base away from the exploitation of raw materials towards the production of more advanced products. It will increasingly compete with Canada in certain commodity markets, as well as in sales of fully manufactured products.

The opportunity to expand trade will depend to a great extent on Brazil's success in restraining its petroleum appetite, overcoming its balance of payment problems and, in turn, liberalizing its import regime. In anticipation of these developments and consequent growth in this large market, it is imperative that Canada pursue new avenues of opportunity, particularly in high technology products. However, Canadians must realize that the Brazilians are justifiably proud of their economic accomplishments. Joint ventures and technology transfer are preferred vehicles to respond to Brazilian objectives. It must also be recognized that the current trade balance in Canada's favour and Brazilian desires for a more equal balance will act as a constraint on the level of Canadian sales to Brazil. Canadian exporters must be sensitive to all of these factors.

Trade is governed by the Canada-Brazil Trade Agreement of 1941 and by the General Agreement on Tariffs and Trade (both Canada and Brazil being founding members of the GATT). In addition, Canada extends the benefits of the Generalized System of Preferences (GSP) to Brazil. The GSP, introduced on July 1, 1974, provides reduced rates of duties on most goods imported from developing countries.

Canada's trade relations with Brazil, dating from the earliest Canadian trade development mission in the 1890s, have proven overall to be mutually beneficial and have been conducted on an open and frank basis. This is not to say that there have not been problems in the conduct of bilateral trade, but rather that mechanisms for the resolution of disputes have worked effectively.

The benefit of the two-way trading relationship was recognized and given added impetus in 1976 with the signing of an agreement to establish a Canada-Brazil Joint Committee on Trade and Economic Relations (commonly referred to as the Joint Economic Committee, or JEC). This committee is intended to provide an institutional framework for discussions as a basis for continued expansion of trade and economic relations. In addition, the JEC provided the foundation for a supplementary agreement for co-operation in agriculture, and a sub-agreement on industrial co-operation.

Activity in government-to-government relations has recently been intense. In January, 1980, the Canadian Wheat Board signed a three-year wheat agreement; in April, 1980, the first meeting of the Joint Economic Committee's sub-committee on industrial co-operation was held in Brasilia and subsequently met for the second time in April 1981 in Ottawa; in October, 1981, the agriculture sub-committee held its third meeting in Ottawa. After a lapse of two years, the Joint Economic Committee met for the third time in Ottawa in June 1980. In August 1980, the Speaker of the Canadian House of Commons led a delegation of House and Senate leaders to Brazil, while two months later, Brazil's Foreign Minister, Ramiro Saraiva Guerreiro, made an official visit to Canada.

In January, 1981, Prime Minister Trudeau made the first official visit to Brazil by a Canadian Head of Government after 40 years of diplomatic relations between our two countries. Discussions centred on North/South issues as well as bilateral trade and economic relations. In February 1981, Brazilian Finance Minister Galveas came to Toronto for meetings with the Canadian banking community. In June 1981, the Governor of the State of Sao Paulo visited Canada, accompanied by a large mission of leading Brazilian businessmen, and in December Trade Minister Lumley made an official visit to Brazil in support of a number of Canadian firms pursuing major capital project opportunities. In February 1982, Communications Minister Fox visited Brazil to discuss Canadian interest in Brazil's domestic communications satellite system, Canada's participation in the Inter-American Telecommunications Conference and other related matters.

An official visit to Canada by Brazil's President is being planned for the second half of 1982, Canada's Secretary of State for External Affairs will visit Brazil in March, 1982, and the Brazilian Minister of Planning has also been invited by Dr. MacGuigan to come to Canada this year. During his March visit, Dr. MacGuigan will undertake detailed political, economic and commercial discussions with Brazilian leaders (including the President) and will formally open the fourth session of the Joint Economic Committee with Foreign Minister Guerreiro. Such official exchanges underline the high priority Canada and Brazil are now placing on bilateral relations.

## CHARACTERISTICS OF THE BRAZILIAN MARKET

### 1. Environmental

With a population of approximately 120 million, growing at a rate of 2.8 per cent per annum, Brazil has more inhabitants than any other country in Latin America and ranks seventh in the world. Most of the population is concentrated in the south-central area which includes the cities of Sao Paulo, Rio de Janeiro and Belo Horizonte. (Figure 1 is a map of Brazil and surrounding nations.)

The basic ethnic stock is Portuguese and African with important elements of Italian, German and Japanese immigrants. Brazil is the only Portuguese speaking country in the Western Hemisphere. Among the educated, English is sometimes spoken. The literacy rate is approximately 70 per cent. About 93 per cent of the population is Roman Catholic. A fact sheet on Brazil is given in Table 1.

Brazil faces a number of serious population problems. At present, some 40 per cent of its population is under 16 years of age. While this holds promise for the future, there is a considerable burden on the working population of the country which represents only about 30 per cent of the population. In addition, about 30 per cent of Brazil's population exists essentially outside the monetary economy, either on small parcels of agricultural land or in areas in or near the major cities.

Brazil's response to such problems is: (1) to integrate a larger percentage of the population into the monetary economy; (2) to provide education and training for youth and to ensure that qualified people are available for Brazilian industry; (3) to improve the availability of basic services to the population as a whole; and (4) to provide for increased family income at all levels through general economic expansion and accelerated job creation (although without addressing with consistency the problem of a highly skewed income distribution pattern).

Although the Brazilian population represents a significant labour pool, the concentration of the urban population is in the Sao Paulo and Rio areas. This has led to an inability of these large cities to deal adequately with the steady flow of people from the farm, and to provide basic services. Equally, the provision of basic education in Brazil, a cornerstone of historical development, has been hampered by the inability of education authorities to amass the resources necessary to provide much beyond the basic minimum. These concerns are reflected in Brazil's current National Development Plan (PND III 1980-1985) which among other things places an emphasis on job creation and income distribution through growth.



## 2. Political

Constitutionally, Brazil is a Federative Republic with broad powers granted to the Federal Government. The Constitution is based on a presidential system with three "independent and harmonious powers" -- the executive, the legislative, and the judicial. The president is elected to a six-year term by an electoral college composed of members of the Congress and representatives of state legislatures and municipalities.

The power of the Brazilian presidency is substantial. The Constitution gives the president the power to intervene in individual states and municipalities. He can also issue decrees with the force of law in matters concerning national security and public finance.

Public sector involvement in economic activity increased significantly during the 1970s. Government participation in the economy reached the point that in 1977 about 85 of the top 200 companies in Brazil had a significant share of government ownership. The government has encouraged private sector participation in public corporations through tax incentives, and in 1981 it instituted a policy of privatization with a view to selling to the private sector some two hundred state-owned companies. This privatization is seen as a means of reducing the government debt to which state company borrowing has been a major contributor. Nevertheless, it does represent a reversal in the trend over the past two decades of increasing state involvement in private enterprises.

A marketing strategy for Brazil must take into account the influence and power of the president as well as the decision-makers of government-controlled firms.

The state runs some of the largest enterprises in Brazil, including the biggest steel producer (Siderurgica Nacional), the largest iron ore producer (Vale do Rio Doce), the oil monopoly (Petrobras) and the electricity generating monopoly (Eletrobras). The state also plays a pivotal role in financing. Some 60 per cent of all investment between 1967 and 1973 was undertaken by the state. The state-run Bank of Brazil has almost a quarter of all bank deposits and the government controls 15 commercial and 11 development banks. Finally, the state also plays an increasingly important role in the economy through expenditures, tax credits to stimulate private investment and tax incentives to divert development into underdeveloped areas such as the Amazon basin and the northeast. A list of state agencies and corporations is given in Table 2.

Brazil is proud of its ecumenical foreign policy -- a policy that avoids automatic alignment on any particular issue, and a policy that allows Brazil to expand the scope of its relation with Western Europe, Japan and the Third World.



The basic objectives of Brazil's foreign policy are: sovereignty, development, peace and security. Foreign policy has been influenced by the country's increasing concern with balance of payments problems and a heavy dependence on imported petroleum and international commodity exports, which largely determine its economic welfare.

Internationally, Brazil has been an outspoken advocate of reorganization of the international economic system. Although, with only observer status in the Non-Aligned Movement, she has not favoured the introduction of East-West issues into the debate on international development and shuns any public attempt to cast her as a Group of 77 leader in order to avoid accusations of hegemonic ambitions. Brazil has, however, strongly argued against the concept of graduation, which distinguishes between levels of development in the developing countries, for fear that it might lose some existing benefits as a result of its relatively high level of industrial development.

Brazil has also devoted attention to expanding its bilateral foreign relations. To date, Brazil's foreign ties have been focussed on economic agreements. Efforts have been made more recently, to expand these into the political arena, and to support economic development goals through international agreements on industrial co-operation, and treaties of friendship and co-operation.

Brazil continues to attach importance to developing economic and commercial relations through agreements with both the developed countries of Europe and North America, and with developing countries. These, however, go well beyond being simple trade agreements and, in fact, are seen in many respects as co-operative ventures to de-emphasize the trade of goods and to stimulate trade in currency and technology. In addition, Brazil has sought to enter into major non-trade agreements, such as the Amazon Pact, to bolster its non-trade ties -- although even here, the long term purpose seems to be to create an environment of friendship and active cooperation with neighbours as a necessary prelude to expanding trade contracts.

Brazil's heavy dependence on oil imports has led to progressively closer relations with Iraq and Nigeria in particular. It has also developed relations with several East European countries in response to its requirements for coal and potash. These countries have undertaken various forms of countertrade in return for the coal and potash they supply. The current crisis in Poland may force some re-evaluation of this particular coal-based relationship.

The United States continues to represent Brazil's largest market, and also its principal supplier and biggest investor. In addition, the U.S. has a long history of co-operation with Brazil, providing monetary support to the administration. The

U.S. in recent years has actively encouraged Brazil to assume greater discipline in the international sphere in light of its position as a middle income country.

### 3. Macro-economic and National Planning

During the economic boom of 1969-73, Brazil's real gross domestic product (GDP) grew at an average rate of 11.5 per cent a year. This rate came down to less than 7 per cent a year during the 1974-79 period. The performance of the domestic economy during the 1974-79 period was uneven. The rates of growth remained significantly below those attained in the 1969-73 period, although they were still fairly high by international standards (Table 3). While 1980 GDP grew in real terms by an impressive 8.0 per cent, an economic slowdown in 1981 resulted in real economic growth of -3 per cent.

In order to reconcile growth-employment objectives with inflation control, the authorities had planned for a reduction in the growth rate to about 5 per cent in 1981. Selective strategies were implemented to permit higher growth in industry sectors with idle capacity as well as in agriculture, and lower growth in sectors with high utilization of capacity. However, various austerity measures as well as international conditions (e.g., high interest rates) resulted in a severe economic downturn in 1981.

The inflation rate more than doubled from an average of 19 per cent a year during 1969-73 to an average of 40 per cent a year during 1974-79. This reflected both external and internal factors. Price developments in the world economy after 1973 resulted in a significant increase in the current account deficit and had a substantial impact on Brazilian costs of production because of the heavy dependence on imported oil. Brazil attempted to limit the impact of these external developments on the domestic rates of growth of output and employment through a combination of restraints on imports and expansionary economic policies which contributed to the inflationary pressures. Inflation in 1980 reached 110 per cent, and by the end of 1981 the rate of inflation had dropped slightly below the 100 per cent level.

It can be expected that the Brazilian Government will continue to fight inflationary effects through future exchange rate adjustments, further refinement and expansion of indexing systems, budget-balancing efforts, curbs on money supply growth, and more control on foreign borrowing.

Monetary policy is set by the National Monetary Council and executed by the Central Bank of Brazil. In 1981 the government attempted to restrict the expansion of the money supply to 50 per cent.

There is a large network of banks functioning under control of the Central Bank of Brazil. The major ones are Banco do Brazil, S.A., Banco do Estado de Sao Paulo, S.A. (Banespa), Banco Brasileiro de Descontos, S.A. (Bradesco), Banco Itau S.A., Banco Real S.A., and Banco Nacional, S.A.

There are also several specialized financial institutions owned by the federal and state governments and these comprise the major sources of long-term credit. Most of these have evolved to support government policy objectives: for example, Finex supports exports; Program Proalcool finances developments in alcohol production as part of the government's energy program; Finame finances the purchase of Brazilian-manufactured capital equipment by medium size companies; Banco Nacional de Habitacao finances housing construction; Banco Nacional de Desenvolvimento (BNDE) lends long-term funds for use in general economic development programs; Banco de Desenvolvimento do Estado de Sao Paulo (BADESP) supports economic development projects in the State of Sao Paulo by lending long-term funds.

Brazil's attitude toward imports is coloured by the state of the current account in its balance of payments. Following the 1973-74 oil price increase, the deficit in the current account rose to about 7 per cent of GDP (from 1969-73 it had been 2 per cent). From 1975-77 the current account deficit was reduced to 3 per cent of GDP through a sharp increase in exports while the volume of imports was kept virtually constant. However, in 1978 this deficit began to grow again, to 4 per cent of GDP in 1978 and 5 per cent in 1979 and 1980. This was due in part to poor agricultural crops, a resumption of import growth (primarily higher petroleum prices beginning in 1979), and a substantial increase in debt service payments.

At the end of 1981, the foreign debt stood at U.S.\$61.4 billion (compared to U.S.\$54 billion at the end of 1980). Public and publicly-guaranteed debt accounted for approximately 70 per cent of this total. A high proportion of this is subject to adjustable interest rates, making Brazil's debt service payments very susceptible to fluctuations in international interest rates. In recent years, external interest and principal payments have been equivalent to more than 60 per cent of Brazil's annual export earnings.

The World Bank increased its financing to Brazil by U.S.\$900 million in 1980 with cumulative lending through June, 1980 of \$5.3 billion, making Brazil the second largest borrower after India. Similarly, the Inter-American Development Bank has loaned over U.S.\$3.5 billion since 1961 to make Brazil its largest borrower.

Currently, Brazil's level of foreign currency reserves is around U.S.\$7.5 billion (December 1981 estimate). This balance reflects substantial draw-downs from the U.S.\$9.2 billion available at the end of 1979.

The Brazilian manufacturing sector has performed most favourably over the last 25 years, in part because it has received the most favours. The sector grew at an average rate of 9 per cent from 1971 to 1978. As a result, Brazil's manufacturing sector is now the largest in Latin America. In 1979 it accounted for 40 per cent of the region's manufacturing output in terms of value added. By comparison, Mexico contributed 22 per cent of the total and Argentina was third at 16 per cent.

Table 4, Production of Basic Raw Materials, indicates industrial growth from 1970-1979.

Despite heavy dependence on imported crude oil, Brazil has built a strong, diversified petrochemical base. Another industry that has been built virtually from scratch since 1964 is shipbuilding. Gross registered tonnage of vessels turned out by Brazilian shipyards rose from 42,000 tons in 1964 to 698,000 tons in 1977. Table 5 shows the growth in output of manufactured goods.

Growth rates in a number of sectors declined in 1981, reflecting a general economic slow-down. Production dropped in all major branches of manufacturing, with the largest decline in capital goods and smaller declines in intermediate and consumer goods. Within the consumer goods field, consumer durables and automobiles in particular experienced the largest declines, reflecting increases in domestic interest rates. Demand for intermediate goods dropped as a result of a sizable buildup of inventories in 1980, and capital goods output was affected by reductions in capital spending by public enterprises.

The Third National Development Plan (PND III) focuses on the more equitable distribution of wealth and the creation of jobs. These two goals are to be pursued in an environment which includes the impact of the energy crisis, the balance of payments problems, the increasing pressure on the extent and cost of the foreign debt, and inflationary pressure of internal and external origins.

According to the strategy outlined in the National Plan, it is expected that the agricultural sector will grow faster than the industrial sector through 1985. It is forecast that the share of agriculture in net domestic product would rise from about 11 per cent in 1978-79 to 18 per cent by 1985. Emphasis will be given to producing exportable surpluses of primary products and increasing employment in the agriculture sector, particularly in the north and northeast regions of the country.



The plan calls for production in the industrial sector to be directed toward producing capital goods for rural electrification, irrigation and fertilizers. Incentives will be provided to decentralize Brazil's industry, away from the Rio de Janeiro-Sao Paulo regions. However, subsidies to export-oriented industries are scheduled to be reduced or eliminated so as to force domestic industries to compete efficiently in world markets. Consumer goods industries will be encouraged to produce increasingly for lower-income groups in the domestic market.

As part of its 1980-85 industrial development strategy, Brazil intends to down play the expansion of new capacity in heavy industry, except for four items: steel, aluminum and alumina, cement, and petrochemicals. - The energy sector, however, is to grow rapidly between 1980-85 as Brazil is assigning priority to the development and use of hydro-electric power, coal, alcohol, and other alternative sources of energy.

#### 4. Trade Policy

Brazil is a founding member of the Latin American Free Trade Association (LAFTA), and its successor the Latin American Integration Association (ALADI). Although trade with ALADI countries has increased in recent years, Central and South America still account for no more than 15 per cent of Brazil's total trade. The Latin American Free Trade Association (LAFTA) has not fulfilled its early promise of providing free trade for the bulk of goods traded in Latin America. Today ALADI (formerly LAFTA) is a forum for the negotiation of tariff concessions on specified products and the exchange of industrial information. Firms that actively participate in this forum have reaped substantial benefits in terms of tariff cutting. ALADI's leaders are enthusiastic about the prospects for the restructured association because of the greater flexibility it affords in forging trade agreements.

Brazil's most important single trading partner is the United States, which absorbs approximately 17 per cent of Brazilian exports and accounts for an almost identical share on the import side. The industrial countries of EEC absorb 27 per cent of Brazil's exports and contribute about 25 per cent to total imports. The most unbalanced trade relationship is with countries in the Middle East; due to Brazil's oil needs, roughly 30 per cent of total imports come from that area while exports to the Middle East account for only about 5 per cent of total imports. Canada accounts for less than 2 per cent of Brazil's total exports and about 3 per cent of total Brazilian imports. Figure 2 depicts foreign trade by region.

Total foreign trade in 1980 amounted to \$43 billion. Both primary and manufactured products contributed to a marked rise of exports in 1979 and 1980, with the latter continuing to expand at

relatively rapid rates. Foreign trade for 1981 amounted to \$44 billion with exports of both manufacturing and primary goods up 15 per cent.

The value of exports of manufactured products continued to increase in 1980, by an impressive 36 per cent. During the three-year period ended in 1979, earnings from these categories of exports had grown at an average annual rate of over 30 per cent. Among the main items in this group, strong gains were registered in iron and steel products, non-electrical machinery, and transportation equipment. As a proportion of total exports, manufactured and semi-manufactured exports rose from 36 per cent in 1974 to more than 56 per cent in 1979 and 1980. Coffee and soybeans continued as the main agricultural exports.

Petroleum dominates Brazilian imports, representing a third of 1979 imports and over 40 per cent in 1980 and 48 per cent in 1981. Imports of chemicals and machinery are also substantial. Brazil imports large quantities of cereals; wheat imports from Canada are particularly important. Table 6 indicates the distribution of imports by product.

After a flat 1975-77 period, imports began to rise again in 1978 through 1980 increasing by 14 per cent, and 31 per cent and 27 per cent respectively. Petroleum imports led the way, increasing from 6 per cent of overall import payments in 1973 to 43 per cent in 1980. The behaviour of imports of capital goods and other industrial inputs has been influenced by import substitution policies. Therefore, imports of iron and steel and mechanical and transportation equipment have been declining steadily in volume terms over the period 1976-80.

Brazil has been an active participant in a large number of international organizations. It was a founding member of the United Nations, the Organization of American States (OAS), the Latin America Free Trade Association (LAFTA), and the General Agreement on Tariffs and Trade (GATT).

In addition to its membership in these organizations and their specialized agencies and working groups, Brazil is a party to most international commodity agreements including the International Coffee Agreement, the International Sugar Agreement, the groups on iron ore and tin, and the GATT Multifibre Agreement.

In its international participation, Brazil has been a leader among the Group of 77 and has been in the forefront in both the Conference on International Economic Co-operation (CIEC) and the United Nations Conference on Trade and Development (UNCTAD).

The fundamental thrust of Brazil's participation in these organizations has been to seek international co-operation to further the process of development among the world's poor



countries. In this context, it is interesting to observe that in addition to receiving development assistance from a large number of countries, Brazil provides aid to some of the poorer nations in Latin America.

Brazil is sometimes characterized as a "newly industrialized country" (NIC). The international trade system -- GATT -- does not require full reciprocity from developing countries in opening their markets and Brazil has benefited from this special treatment. Therefore, an important trade issue for industrialized countries will be to find ways to induce countries like Brazil to begin to open up their own markets and assume more and more the obligations which go with industrialization.

#### 5. Instruments of Brazilian Import Policy

The Brazilian Government uses a combination of measures to regulate imports, including customs tariffs, import licensing, temporary import surcharges, a special tax on purchases of foreign exchange to pay for imports, and minimum external financing requirements for a range of imported products.

Tariff classification is based on the Customs Co-operation Council Nomenclature (CCCN), formerly the Brussels Tariff Nomenclature (BTN). Duties are ad valorem with rates (inclusive of surcharges) ranging as high as 205 per cent on luxury and non-essential goods. Most goods have duties from 15 per cent to 55 per cent. Duties are calculated on the c.i.f. (cost, insurance and freight) value of the merchandise.

On a few selected items the Customs Policy Council has established minimum prices which are used as the value for duty, unless the invoice value is higher. In addition to the minimum value system, Brazilian law provides for the imposition of reference prices whenever a Brazilian commodity is prejudiced by a general reduction in import prices or by a substantial price difference among several supplier countries. Reference prices have been established for several products. When the Customs Policy Council proves dumping on entries for which the declared value is less than the established reference price, a special duty equal to the difference between the declared value and the reference price is levied in addition to the usual ad valorem duty calculated on the reference price.

Capital goods imports may qualify for tariff reductions when they are part of an investment project approved by certain regional or sectoral development agencies. Import duty concessions generally will only be granted on products for which there is no domestic equivalent.

Importers must be registered at the Foreign Trade Department (CACEX) of the Bank of Brazil in order to be able to import goods. Most imports are subject to the grant of an import certificate (Guia de Importacao) by CACEX. Certificates are valid for 60 to 180 days depending on the category of goods imported.

The issuance of import licences for a broad range of non-essential items that are locally produced has been suspended by CACEX since 1976. This measure covers virtually all consumer goods. The suspension does not apply on imports originating and coming from member nations of ALADI, provided goods are on the national list of Brazilian concessions.

For control purposes, imports are divided into three categories: (1) imports for which no guia or other CACEX document is required (these include samples of no commercial value, as well as materials for educational and scientific purposes for the importer's own use); (2) imports for which a guia is required; and (3) imports which are prohibited outright or banned temporarily by specific legislation.

The Minister of Finance may, on a temporary basis, and in accordance with the directives of the Economic Development Council (CDE) and without prejudice to commitments under ALADI, authorize CACEX to reject applications for import certificates where: (1) imports are for speculative stock building purposes; (2) imports are causing or threatening to cause serious damage to the national economy; or (3) imports originate in or are shipped from countries that impede Brazilian exports.

Beginning in 1981, CACEX introduced an import programing system whereby firms intending to import more than U.S.\$100,000 were required to submit their import plans to CACEX at the beginning of the year for approval. Generally, imports will be approved only up to the level of actual imports during the previous calendar year. A special case must be made for imports to exceed that level.

Certain industrial production is reserved by government decree for Brazilian companies; consequently, imports of these products are normally prohibited. These include mini-computers, telephones, integrated circuits and semi-conductors, and some other aspects of the data processing sector. This is monitored by the Special Information Secretariat (SEI) which reports to the National Security Council. Imports of iron, steel and certain non-ferrous products require prior approval of the Council for Non-ferrous and Ferrous Metals (CONSIDER). Imports of used machinery, equipment and instruments require prior approval by CACEX. Prior approval of the Minister of Aviation is required for imports of civil aircraft.

The import licensing system is described by the Brazilian authorities as automatic. The stated aim of the system is to exercise surveillance over import prices for exchange control reasons, not to restrict imports. In practice, however, the administration of the import licensing system is an effective constraint on imports.

Importers must close an exchange contract for the purchase of foreign exchange to pay for imports. Payments before shipment or before arrival of shipping documents require permission from the Foreign Exchange Department of the Central Bank (FIRCE). There is a tax -- known as the IOF tax -- of 25 per cent on foreign exchange purchased to pay for imports.

Without official approval of credit terms and the noting thereof on an import guia, importers cannot purchase foreign exchange. A deposit equivalent to 100 per cent of the value of the exchange is required, with some exceptions, for the contracting of forward exchange for the opening of letters of credit. These deposits are released on the date of settlement or the date of cancellation of the contract.

Imports exempt from the deposit requirement include beef, printing paper for newspapers, magazines and books, fertilizers, certain agricultural chemicals and related raw materials for their production, and goods imported into the Manaus free zone. Also exempt are imports authorized under drawback operations and imports of seeds and fruits for planting.

In 1980 the Central Bank introduced Resolution 638 which established minimum external financing requirements for a range of imports, according to their value. This measure affects approximately 30 per cent of all Brazilian imports, including durable consumer goods, chemicals, steel products and capital goods.

This regulation is administered on the basis of total annual imports (in a calendar year) by individual importers. Issuance of import permits is contingent on the importer obtaining the necessary financing. The required financing terms apply as follows:

<u>Value of Imports</u>	<u>Minimum Terms</u>
\$100,000 to \$300,000	3 years
\$300,000 to \$1 million	5 years
Above \$1 million up to \$5 million	7 years
Over \$5 million	8 years

The following imports are exempted from this requirement: goods imported for repair of commercial aircraft; for Nuclebras; for energy conservation; for television and radio broadcasting or publishing houses, or for shipbuilding; as well as goods imported under duty drawback rules.

6. Foreign Investment Controls

Foreign investment has contributed significantly to the development of Brazil's economy and, traditionally, successive Brazilian Governments have openly encouraged foreign investors. Foreign investment in the form of currency, technology and capital goods has been recognized as an essential input to attain the government's goal of rapid and sustained economic growth.

Foreign investment capital in Brazil is generally accorded the same treatment as Brazilian capital, and several sectors are closed to the foreign investor. Areas set aside for Brazilian government monopoly, inter alia, petroleum, telecommunications, mining of certain ores, fishing, domestic airlines, coastal navigation, broadcasting and certain banking activities are closed to foreign ownership.

Capital inflows in the form of financial loans are subject to ceilings and require the prior approval of the central bank. Otherwise capital inflows are unrestricted and free of control. Capital entering Brazil is registered in foreign currency. Foreign-owned companies may convert foreign loans extended before December 31, 1978, into non-voting equity capital; profits on foreign direct investment may be reinvested in any sector of the Brazilian economy.

The foreign investor is restricted in the amount of profit that may be remitted. Central bank regulations require investors to register foreign investment. The value of this registration is used as the basis for profit remittance. Generally, any profits may be remitted on payment of a standard 25 per cent withholding tax, except that a supplementary tax is applied on excess remittances (that is the amount by which average remittances during the previous three years exceed 12 per cent of registered foreign capital). The supplementary tax rates are as follows:

- 40 per cent on remittances between 12 and 15 per cent;
- 50 per cent on remittances between 15 and 25 per cent;
- 60 per cent on remittances over 25 per cent.

The remittance of profits is restricted to 8 per cent per year for companies which produce goods and services considered to be superfluous.



These supplementary tax rates represent a significant limitation on remittances. Their impact is further magnified by the fact that much foreign investment in Brazil predates registration procedures and requirements. Consequently, the basis on which remittances are calculated is understated, and annual remittances of established firms are significantly below 12 per cent of actual investment. This has contributed to a high level of reinvestment in the country.

The Brazilian registration procedure recognizes capital goods and technology as valid forms of investment, and the value of these may also be registered to establish a basis for calculation of remittances. In addition, any firm may register with the Central Bank reinvested Brazilian earnings, in order to increase the base for remittances.

Remittance of technical assistance fees and royalties is controlled by the central bank and the National Institute for Industrial Property (INPI). These agencies set limits on the rate of remittance and appraise the value of imported technology. Each contract is examined separately. The review procedure is lengthy, except when the technology is urgently needed by a Brazilian government agency or an export industry. In 1978, INPI began requiring Brazilian companies to consult with it before concluding negotiations for the purchase of foreign technology. This provides an opportunity for INPI to impose restrictive conditions on technical data contracts at the outset of negotiations rather than have to decide on approving a contract which has already been signed.

Licensing agreements are usually valid for a period of no longer than five years, by which time the licensee is expected to have absorbed the new technology or know-how. Royalties are limited to rates ranging from 1 to 5 per cent of gross earnings. To establish remittance rights, contracts must be registered with the central bank as well as with INPI. Royalty payments by Brazilian branches or subsidiaries to their foreign parents are severely restricted. In fact, remittance of patent or trademark royalties by such entities is prohibited.

Joint ventures with Brazilian firms are a preferred form of foreign investment as this leads to significant new opportunities for Brazilians in managerial and executive positions. Although there are no direct instruments to require joint ventures, many industrial incentive programs are available only to Brazilian firms and their partners, and this acts as an effective inducement.

Several advantages of the joint venture form of organization can be enumerated. Firstly, local manufacturing avoids the system of import duties and permits associated with exporting many products to Brazil. Secondly, access to the entire Latin America market

is possible, sometimes on preferred terms as a result of free trade arrangements of which Brazil is a party. Thirdly, formation of a majority Brazilian-owned entity provides access to a broad range of concessionary finance and fiscal incentives. For example, commercial banks are required to reserve 70 per cent of their cruzeiro funds for loans to Brazilian-controlled enterprises. Fourthly, partnership with a Brazilian firm allows smooth transition to local business customs and practice. In fact, the complexity of the Brazilian regulatory structure requires substantially different ways of doing business from those of Canada.

For these various forms of investment there are a number of organizations providing export incentive programs including BEFIEX and FINEX. BEFIEX grants potential exporters subsidized project financing as long as they undertake to export predetermined percentages of the resulting new production. FINEX allows Brazil to offer cheap financing for Brazilian exports on terms up to five years and at fixed rates of 7 to 8 per cent depending on the nature of the goods. The authorities assume the difference resulting from the going market rate, LIBOR or prime plus spread and the 7 per cent or 8 per cent repayable by the buyer. Another important incentive recently reinstated (April 1, 1981) is the provision for an export credit premium whereby an exporting manufacturer can obtain a sales tax credit based on the federal Industrial Products Tax (IPI) and the state Merchandise Circulation Tax (ICM) which would normally be paid on exported products. There are also income tax incentives for exporters.

According to Brazilian statistics, direct foreign investment and reinvestment totalled U.S.\$17.5 billion at the end of 1980. Of this amount, the leading source was the U.S. (28.6 per cent), followed by West Germany (14.0 per cent), Switzerland (10.1 per cent), Japan (9.8 per cent), the United Kingdom (6.3 per cent), France (4.1 per cent) and Canada (3.7 per cent), (Table 7).

Most direct foreign investment was in manufacturing led by chemicals and transportation equipment, with pharmaceuticals, rubber goods and electrical goods also being important.

## CANADA-BRAZIL TRADE AND ECONOMIC RELATIONS

### 1. Bilateral Trade

Canada-Brazil two-way trade reached a record high in 1980, exceeding \$1.2 billion. Canadian exports to Brazil totalled \$893 million, an increase of 112 per cent over 1979, with the result that Brazil replaced Venezuela as our largest export market in Latin America and tenth largest importer of Canadian goods. Brazilian exports to Canada amounted to \$347 million, an increase of 11 per cent over 1979.

Before 1968 Brazil maintained a trade surplus with Canada, but since then the balance of trade has been substantially in Canada's favour. Table 8 shows the growth of Canada-Brazil trade from 1968 to 1980. Exports to Brazil grew in this period from \$48.2 million to \$893.2 million, with a compound annual growth rate greater than 27 per cent. The balance of trade has also been increasing in Canada's favour, from \$9.5 million in 1968 to over \$545.4 million in 1980.

Leading export items in 1980 were:

Wheat	- Brazil is now a leading customer, with substantial shipments under a three-year wheat agreement signed in 1980
Potash	- Brazil is Canada's second largest market
Sulphur	- Brazil is Canada's second largest market
Newsprint	- Brazil is Canada's fifth largest market
Coal	- Brazil is Canada's third largest market
Aircraft Engines	- Pratt and Whitney has supplied more than 1,000 aircraft engines to Embraer, Brazil's national aircraft manufacturer

Table 9 identifies Canadian exports to Brazil by commodity from 1977 to 1980. Significant growth by the leading items mentioned above have contributed to Canada's surplus. Figure 3 illustrates the distribution of trade by the commodity category. In terms of Canadian exports to Brazil, the highest growth has been in agricultural products (particularly wheat) and semi-manufactured goods. However, as the Brazilian market continues to expand and if Brazilian import restrictions are eased, there will be significant potential for both manufactured as well as non-manufactured exports from Canada. Goods from Canada currently account for less than 3 per cent of Brazil's total imports.

Export trade with Brazil benefits all areas of Canada, although the present dollar amount is weighted heavily to the West. New opportunities in sophisticated manufactured exports are more likely to benefit manufacturers in Eastern Canada.

Wheat, potash, sulphur and coal come primarily from Western Canada, although significant amounts of coal are sent from Cape Breton and potash will likely be shipped in the future from New



Brunswick. Quebec has provided newsprint, airplane engines, aluminum and zinc; Ontario has sent autoparts, engines and machinery, plastic resins and some minerals. Seed potatoes and saltfish have been the principal exports from the Maritimes to Brazil.

Canadian imports from Brazil have become more diversified and industrialized (see Figure 3). Leading items in 1980 were:

Fabricated and fully-manufactured products -- about 50 per cent of total Brazilian sales to Canada

Coffee -- 16 per cent of total sales; almost half instant rather than green beans

Motor vehicle engines -- 31 per cent of total sales.

Other leading items were bauxite, orange juice concentrate, footwear, cocoa and chocolate, steel products and baler twine. Table 10 lists the main Canadian imports from Brazil by commodity in the years 1977-80. Brazil was the fifteenth leading exporter to the Canadian market in 1980.

## 2. Transportation

In recent years, direct shipments between Canada and Brazil have approximated three million tonnes (3,241,000 in 1979), predominantly Canadian bulk shipments of wheat, sulphur, potash and coal. Combined northbound and southbound traffic of general cargo totals about 400,000 tonnes annually.

In the late 1960s Brazil adopted flag discrimination and cargo preference policies with the object of guaranteeing that a large portion of the country's trade would be carried in Brazilian bottoms. In 1967, the Brazilian Government dissolved the shipping conferences serving the country and restructured them giving preference to Brazilian flag ships. The Inter-American Freight Conference in the trade between eastern Canada and Brazil initially included a number of third flag carriers (Swedish, German and American). However, cargo preference measures in various forms instituted in the following four years compelled all third flag carriers to discontinue sailings. At present, regular shipping services between eastern Canada and Brazil are provided by two Brazilian lines: Netumar (Compania de Navegacao Maritima Netumar) and Lloyd Brasileiro.

Cargo liner shipping services for the trade between Pacific Coast ports (Canada and the United States) and Brazil are provided by member lines of the Pacific Coast River Plate Brazil Conference. The member lines are Lloyd Brasileiro, Delta, Canadian Westfal-Larsen, Argentine Lines, and Lauritzen-Peninsula Reefer Service. Only the first three lines call regularly at Canadian and Brazilian ports.

Canadian shipping interests have been investigating possibilities of offering ocean transport services between Canada and Brazil for general and bulk cargo. Opportunities may arise for joint ventures benefiting both Canadian and Brazilian shipowners. Additional capacity, greater frequency of sailings and competition in the ocean trades would materially assist the growth of commerce between the two countries.

At present no bilateral air agreement exists between Canada and Brazil. Direct air service, however, is provided by Aerolineas Argentinas once a week between Montreal and Rio de Janeiro via New York. Connecting flights are also available via New York and Miami from Montreal and Toronto. San Francisco, Los Angeles, Lima and New York are connecting points for flights originating out of Western Canada.

In addition to cargo freight service on passenger aircraft, scheduled all cargo flights are offered via several North American gateways. Passenger and cargo charter services are available on an as-required basis.

### 3. Investment

The registered value of Canada's investments in Brazil was U.S. \$631 million as of June 30, 1981, although the market value of these investments is thought to be several times higher. Canadian statistics show Brazil to be the second leading recipient of Canadian direct investment abroad.

Brascan, Massey-Ferguson and Alcan comprise the Big Three of Canadian firms in Brazil. In addition to these three companies, there is a long list of Canadian firms with varying degrees of investment in Brazil, including the major chartered banks, consulting firms, mining, forestry and pharmaceutical companies. Despite its current economic difficulties Brazil continues to be attractive to Canadian investment.

Brazil's investments in Canada are negligible, and are limited basically to trading operations. Banco do Brasil, Banco Real and Banespa have representative offices in Toronto. Cobec, a commodity trading company, also has an office in Toronto, and Varig airlines has agency offices in both Toronto and Montreal.

A number of countries have concluded tax treaties with Brazil. These include West Germany, Austria, Belgium, Denmark, Spain, Finland, Italy, Japan, Norway, Portugal and Sweden. These treaties usually provide reduced rates of taxation in Brazil for remittances to those countries. Such a treaty with Canada has not been concluded, although a draft was initialled in 1977. That draft is currently under revision and negotiations are deadlocked at present.



## CANADIAN TRADE DEVELOPMENT INSTRUMENTS FOR BRAZIL

### 1. Trade Promotion

Trade and investment constitute the most important component of our relations with Brazil, and commercial considerations are almost always the centre piece for high level contacts between the two governments.

Recent events have made it clear that if Canada is to maintain and improve its relations with Brazil, particularly in the economic sector, new and highly visible initiatives should be taken.

Canada maintains three trade offices in Brazil -- an Embassy in Brasilia and consulates general in Sao Paulo and Rio de Janeiro. The consulates general focus primarily on export promotion while the Commercial Division of the Embassy has greater responsibility for overall trade relations and in government liaison for most large projects. Useful contacts in Canada and Brazil are listed in Table 14.

The federal government's Program for Export Market Development (PEMD) provides financial assistance on a cost sharing basis to businesses involved in exporting goods and services with significant Canadian content. The program is designed to assist Canadian firms to penetrate new, or expand existing markets. The Promotional Projects Program (PPP) includes External Affairs-sponsored Canadian participation in trade fairs abroad, incoming and outgoing trade missions and visits by incoming trade delegates and buyers to examine Canadian products and industrial capabilities. Projects that have been supported in past years by the Promotional Projects Program in Brazil are presented in Table 11.

### 2. Brazil-Canada Joint Economic Committee (JEC)

The Joint Economic Committee has met four times since the Exchange of Notes that created it in 1976. Past discussions have included a review of our trade and economic relations, including specific trade issues and irritants, an examination of ways in which our bilateral commercial exchanges could be enhanced, and the major issues affecting the international economic environment. A meeting of the JEC was held in March 1982.

From the JEC has evolved a permanent sub-group on industrial co-operation. A similar sub-group on agricultural cooperation was created in 1977 following an exchange of visits between the Ministers of Agriculture of the two countries.

### 3. Financing

Export financing is one of the key elements and often a condition to achieving sales of capital goods to Brazil. The importance of such financing is illustrated by the fact that Brazil is the second major recipient of export credits after Algeria. Brazil has traditionally been one of Export Development Corporation's (EDC) most active markets in Latin America. EDC's loans in the past have supported a wide variety of equipment sales, including hydroelectric projects, electric transmission equipment, off-shore drilling platforms, ships, aircraft and components, mining and communications equipment, locomotives and chemical plants.

EDC is very positive about Brazil's long-term economic outlook and is prepared to substantially increase its exposure in Brazil, both through direct financing and insurance programs, by as much as \$100 million per year over the next few years. While still focussing on those sectors where Canada has traditionally been competitive such as energy, mining, forestry and transportation, EDC is also directing its efforts to financing exports in the growing high technology sector, where Canada has a "competitive edge" in such fields as communications, electronic goods and oil-related equipment.

To capitalize on the many opportunities that exist for Canadian exporters in Brazil, EDC has implemented several new programs which in the coming year, will be of increasing importance in the Brazilian marketplace. EDC has signed a \$5 million relending line of credit with Banco Real S.A. and is actively pursuing discussions with several other financial institutions, state agencies and electric utilities with the view to concluding similar arrangements. EDC's new forfaiting program introduced in the fall of 1981 has also proven successful.

The lines of credit and the forfaiting programs were designed as a quick, efficient and simple method of providing financing to Brazilian buyers who are interested in pursuing smaller import transactions, quite often with small and medium-sized companies in Canada.

EDC has also had discussions with the Government of Brazil to explore the possibilities of significant financial agreements supporting the supply of Canadian equipment and services for several major capital projects.



Canadian chartered banks have also been very active in providing short and medium-term financing to Brazil. Loans are made in both local and foreign currencies (Euro-financing) directly to the private sector (mostly to local banks) or through a mix of private and public interests. A few long-term transactions have also taken place directly with the Brazilian Government. It is estimated that the total gross Canadian bank exposure in Brazil is in excess of U.S.\$4 billion, representing more than 6 per cent of the country's total external debt.

In addressing its balance of payments difficulties, Brazil has developed a policy that seeks parallel commercial bank financing at least equal to, and in some cases up to double, the financing required for specific projects. In effect, foreign firms bidding on major capital projects in Brazil are required not only to arrange 100 per cent of the project financing but, in addition, to arrange parallel financing ranging from 100 to 200 per cent of the supplier credits. If Canadian firms are to be successful in the Brazilian market for capital projects, they should be prepared to encounter requests for this type of financing. Such financing has been provided in the past by some of our competitors (e.g., France and the U.K.). The practice of parallel financing is likely to remain until 1984.

#### 4. Development Assistance

Since the mid-1960s, Canada has provided development assistance to Brazil. Under its Bilateral Program, CIDA has financed a variety of projects ranging from social projects such as urban development and the construction of schools to heavy infrastructure projects. Eighty per cent of goods and services used in these projects must be sourced in Canada. CIDA had originally decided to phase out the bilateral technical co-operation program with Brazil by 1984, but a new program is being developed which would recognize Brazil's status as a middle income country.

CIDA's Industrial Cooperation Program has also been used to support projects and starter studies for strengthening ties between Canada and Brazil. Firms which have received assistance from this program are listed in Table 12. This division of CIDA is scheduling TEC CAN '82 for September 1982 in Sao Paulo. This exposition is aimed at introducing small and medium-sized Canadian companies to the possibilities of joint ventures and licensing arrangements in Brazil.

The Canadian Executive Service Overseas (CESO) has also been active in Brazil and has undertaken a number of studies and projects.



5. Private Bilateral Organizations

The Brazil-Canada Chamber of Commerce, federally incorporated in December, 1973, is a non-profit association whose membership consists of Canadian companies interested in Brazil. It has these main objectives: to encourage the exchange of information and cultural material between Canada and Brazil; to encourage the exchange of visits by members of academic, cultural, professional, technical, commercial and industrial groups; and to promote increased trade between the two countries.

The Chamber's program includes the use of films, slide-talks, speeches and briefings, a monthly newsletter, and the operation of an enquiry-answering service on all aspects of Brazil for the news media, the academic and business communities, and other interested groups.

A most important aspect of the Chamber's program is its close day-to-day working relationship with its counterpart association in Brazil, the Câmara de Comércio Brasil-Canada whose members are Brazilian and Canadian companies interested in Brazilian-Canadian relations. The Câmara has offices and a full-time staff in Sao Paulo and meets regularly in Sao Paulo and Rio de Janeiro.

The Canadian Association - Latin America and Caribbean (CALA) was founded in 1969 by a group of senior Canadian businessmen who believed a vehicle was needed to effect a better understanding of Latin America in the Canadian business community and to promote Canadian business interests in the area. They recognized that a broader appreciation of the economic development of Latin American countries would lead Canadian business to establish closer trade links in the region from which both Canada and Latin America would profit.

CALA informs its members continually of economic and political developments in all Latin American countries, offers counsel to companies wishing to explore this market, brings to the government's attention the concerns of the private sector in its dealings with Latin America, actively publicizes areas of Canadian expertise and technical competence and has established businessmen's committees in various countries.

CALA sends out missions of senior businessmen to the region to promote Canadian economic interests abroad. CALA represents the Canadian business community in hemispheric business associations such as Forum das Americas and it publishes quarterly a news bulletin in Portuguese, which it mails to 400 Brazilian businessmen.

## II. MARKET OPPORTUNITIES AND SECTOR MARKETING PLANS



#### PRIORITY SECTOR IDENTIFICATION

This analysis of the Brazilian market and historical review of Canadian exports to Brazil identifies a number of sectors to which the Brazilian government accords priority in national planning and policy-making. Concurrently, bilateral interaction between the two countries has produced a consensus about where Canadian expertise could be matched with Brazilian development requirements.

Although the long-term potential for Brazil is optimistic, the country has at this time adopted a number of restrictive trade measures to improve its balance of payments, reduce its high rate of inflation and ease its serious foreign debt problems. For this reason, opportunities for Canadian exporters are concentrated in a distinct group of industry sectors. The sectors selected for this marketing plan fall largely into two main types. The first are sectors where trade has been historically significant and a concerted strategy is necessary to protect or improve Canada's market share; these include exports of wheat, potash, coal, sulphur, and airplane engines. The second are sectors for which the Brazilian government is prepared to grant import permits. These include such imports as offshore oil rigs and telecommunications equipment. Thus the sectors chosen for inclusion in this plan are: aerospace, telecommunications, ocean industries, chemicals, agricultural food products, and minerals.

In the area of capital project development, opportunities exist for Canadian firms to participate in the Brazilian forestry sector (e.g., the Tukurui land-clearing project), the mining sector (e.g., the Grand Carajas Project), in agricultural storage, and in fisheries development plans sponsored by the government fisheries agency, Sudepe.

The sectors included in this plan do not represent the only areas of opportunity for Canadian exports to Brazil. Opportunities will also exist for individual goods and services in other sectors, such as urban transportation. The Urban Transit Development Corporation and the Toronto Transit Corporation have received consulting and management contracts from EBTU, the Brazilian Urban Transportation Company, and opportunities for further contracts will be available because of a recent World Bank loan to develop this sector. Opportunities for imported equipment in this sector will be on a selective basis because of competent local manufacturing capability in some areas. Other examples of products which might fare well in Brazil include mining equipment, railway equipment, certain power-generating machinery, and salted codfish. The Department of Fisheries and Oceans has published a text outlining the prospects for fish exports to Brazil until 1985.

Opportunities for Joint Canadian-Brazilian Participation in  
Capital Projects in Third Countries

Brazil has recently been encouraging the export of goods and services for capital projects as a means of earning foreign exchange and improving its balance of payments. Twenty Brazilian construction engineering companies are now working in more than a dozen different countries, and it has been estimated that there are 10,000 Brazilians working abroad on construction and other service contracts.

Brazil is viewed favourably in the Middle East because of the large trade imbalance caused by its petroleum imports. Also many developing countries and international financing institutions see Brazil as a model for developing countries, and are likely to treat its bids favourably.

With the continuation of Brazil's increasing share in overseas capital projects, Canadian consulting and construction firms and manufacturers of capital goods might approach these companies to obtain subcontracts in areas of demonstrated Canadian capability. A list of some of the major Brazilian companies active overseas is included in Table 13.

## AEROSPACE

### The Opportunity

In less than 20 years Brazil's aeronautical industry has achieved a remarkable degree of success. Although faced with a shortage of domestic skills and modern technology during the 1960s, the country overcame these obstacles by means of licensing arrangements so that a range of increasingly sophisticated aircraft and sub-systems are now produced or assembled. Since 1975 Brazil has reached the stage of producing components for U.S. military and general aviation aircraft and has sold twin engined transport aircraft of its own design (the Bandeirante) to some 20 countries, including the United States, the United Kingdom, France and Canada (Wapiti Aviation Company, Alberta). Brazilian production in terms of quality has clearly achieved world-class stature.

The most striking developments in Brazilian aeronautics have taken place since 1970, after EMBRAER (Brazilian Aviation Enterprise), a government-controlled systems development and manufacturing company was formed to take command of the country's aircraft industry. EMBRAER now employs more than 6,000 workers and has constructed some 2,500 aircraft. In particular, the company has built or is developing jet fighter trainers and attack planes of Italian design, six general purpose transportation models under licence from Piper, the domestically designed agricultural aircraft known as Ipanema and the indigenous twin turbo prop transport Bandeirante which is equipped with Canadian Pratt & Whitney PT-6 engines. In excess of 400 Bandeirantes have been produced to date. Total company sales amounted to U.S.\$185 million in 1980 of which approximately U.S.\$80 million was export revenue.

Two factors underlying the rapid advance of Brazil's aeronautical industry have been the requirements of the Brazilian air force and the government's firm commitment to the development of a domestic aerospace capability by means of licensing or joint venture arrangements to promote local manufacturing. All such arrangements are aiming at ultimately graduating from local assembly operations to the local manufacturing of aerospace components and systems. Increasing emphasis is now given also to marketing agreements with joint partners to allow Brazilian-made aerospace products to be sold in third-country markets through the well developed marketing networks of already established manufacturers.

The Brazilian Aerospace industry uses more than 250 domestic suppliers. Of an average 28,000 parts of an airplane, reportedly 23,000 are produced locally. These parts are manufactured by industries from the automotive and electro-domestic sectors. In all cases, existing technology was updated and further developed with the active assistance of EMBRAER and the Technical Centre -- Aerospace of the Air Ministry (CTA).



Airframe and wing structures are made in Sao José dos Campos by EMBRAER. Other components such as: seatings, carpeting, plastics, electrical components, electrical wiring, connectors and switches, radio equipment, aluminum profiles, special glues, asbestos sheeting, rubber parts, screws, steel wire, glass and paddings, etc., are purchased by EMBRAER from domestic suppliers.

Most electronic equipment is produced locally by 30 Brazilian electronic manufacturers, many of them subsidiaries of multinational companies. Brazilian authorities have stated their intention to have a series of electronic components and systems produced in Brazil, by making use of close co-operation, possibly on a joint venture basis, between local and foreign companies. The priorities include: SSB communication systems, audio systems, fuel consumption control systems, UHF antennas, navigation systems and flytronics (static inversion).

Opportunities for direct export sales exist in those equipment areas where local production is not feasible, either for technical reasons or lack of sufficient market potential. Among these are automatic pilot systems, STOL equipment, Klixon disjunctors, onboard radar equipment, propellers, and landing gear.

One of CTA's responsibilities is to assist local industry in producing high technology items. Consequently, CTA has developed prototypes for most of the aforementioned equipment which is not yet available from domestic sources. However, production in these cases under CTA auspices has in some cases run into difficulties such as a lack of adequate industrial tooling. A case in point concerns aluminum forgings required for landing gear assemblies. Other cases involved sophisticated metals such as nickel alloy, light alloy steels, magnesium steels, and high temperature resistant alloys. It is expected, therefore, that components made of these alloys will continue to offer direct export potential for the foreseeable future.

Primary metal processing is also a field where a combination of limited market potential and lack of special tooling makes local production impracticable on an ongoing basis. Vacuum metal casting, precision shell casting and production of special nickel alloy welding material are areas where lack of development appears to be retarding the expansion of the domestic aerospace industry.

#### Canadian Industry

Approximately 100 companies with annual sales of \$2 billion constitute the Canadian aerospace industry. Total employment of 42,000 persons includes very highly skilled technical and

scientific personnel who ensure that the industry enjoys the most advanced technology and production methods and the most meticulous quality control procedures. Ten companies account for about 60 per cent of total industry sales and together with the next 30 largest firms account for 90 per cent of sales. Canadair Ltd. (Montreal), de Havilland Aircraft of Canada (Toronto), and the McDonnell Douglas Aircraft Company of Canada (Toronto) lead the industry in aircraft and airframe parts production. Pratt & Whitney (Montreal) manufactures aero-engines and parts, SPAR Aerospace (Toronto) and Bristol Aerospace (Winnipeg) produce space related products, airframe components and provide repair and overhaul facilities, Litton Systems (Toronto), Computing Devices (Ottawa) and Canadian Marconi (Montreal) provide avionics, and CAE Electronics (Montreal) is a leader in flight simulators. The industry as a whole has the capability to design, develop, manufacture and market complete aircraft and aero-engines, space and aero-engine systems and sub-systems, and provide contract machinery and special process service.

Engines and components constitute around 40 per cent of total sales, airframes provide another 27 per cent and avionics provide 16 per cent of sales. The remaining 7 per cent of total industry sales is divided among various space and special products. It is economically impractical for Canadian companies to provide all the diverse products required by the aerospace industry. Consequently imported components used in the manufacture of Canadian aerospace products account for more than 33 per cent of the value of aerospace production.

Some 65 per cent of all Canadian industry sales are used in commercial rather than military applications. In recent years Canada's aerospace industry has shared fifth place in world sales with Japan, behind the U.S., France, the U.K., and Germany. This high standing has been achieved without the benefit of any massive government investment for military research and procurement, unlike the situation in other aerospace countries. Sales have been made in highly competitive international markets. Indeed, export sales account for 80 per cent of total Canadian production so that the industry ranks second behind auto parts as an exporter of Canadian transportation equipment. Unlike auto parts, however, aerospace sales have not been predominantly confined to the U.S. market but are widespread internationally.

At this time there is widespread confidence in the future growth of the international aerospace industry at levels exceeding expected annual GNP growth. Fuel price increases have made existing commercial fleets subject to accelerated obsolescence. At the same time, demographic trends and related affluence levels are stimulating the general aviation market. The continued high levels of defence expenditures and an emerging awareness of the advantages of private aircraft

for corporate travel will also extend the market for aerospace products in the future, as will the increased interest in satellite systems for both military and civil purposes. Finally, opportunities will be created by the aging or general shortage at present of specific types of aircraft such as freighters, commuter aircraft and coastal patrol amphibians.

Canada is noticeably well placed to exploit these potential opportunities because of past development of proprietary products, the successful adjustment to the demands of international competition, and the rationalization of industrial capability which has already been undertaken.

Canada's relative advantage in some international market segments is particularly apparent in the following areas.

- a) Utility/STOL Aircraft -- a definite market niche exists for a medium-size aircraft (30-35 passengers), along with some possibilities for an aircraft larger than the current Dash-7 (about 60-65 passengers). Canada has an eminent position in this field in both technical know-how and marketing capability.
- b) Medium Transport Aircraft -- there is a definite opportunity for a jet transport of the 100,000 lb. class, with unprepared runway/STOL capability. Similarly, there is a need for a smaller civilian transport of the 60,000 lb. class (which could be filled by the Transporter, the civil version of the DHC-5 Buffalo). At this point in time, Canada has a lead in jet STOL technology.
- c) General Aviation (Corporate Aircraft) -- Canada has a successful entrant in the corporate jet field with the Challenger, but further advancements and refinements, such as the stretched version (Challenger E), will be made to maintain our pre-eminent position.
- d) General Aviation (Private) -- since Canada is the world's second largest general aviation market, importing up to 1,000 light aircraft each year, mainly from the U.S., for a variety of civilian purposes, there appears to be some potential in selected product niches in this area.
- e) Aerospace Sub-systems -- Canada has achieved a leadership position in a number of specific areas, including small aircraft gas turbines, small-turbine fuel control systems, landing gear and flight control systems, temperature control systems, precision aircraft-quality castings, and avionics (including simulators) -- all of which are fields in which Canadian firms have integrated design, development and production capability.

- f) Remote Manipulation and Payloads -- Canada has achieved a leading position in these areas of highly specialized technology; in fact its stature with respect to space manipulators is unique in the world. This position should be further consolidated by new applications.

#### Canadian Marketing Activity

Canadian Marconi has supplied navigation and sonar equipment and Leigh Instruments has provided traffic control systems and crash position indicators to the Brazilian armed forces. Other firms active in the Brazilian market include Goodwood Data Systems, for sales of meteorological systems to the airforce; Mathews Conveyor Company for airport luggage transportation systems; and CAE Electronics for flight simulators and satellite equipment.

Canadair has submitted a proposal for supply of CL-215 Water Bombers to Sao Paulo state authorities. Concomitantly, Canadian aerospace services firms are exploring possibilities for CL-215 leasing arrangements given the complementarity of the fire-fighting season in Canada and Brazil.

#### Canadian Success Stories

Pratt & Whitney made its market entrée into Brazil against competition from the U.S. with the PT 6A-34 free-turbine engine for use in the Bandeirante aircraft. To secure these sales, arrangements were made to allow for limited manufacturing to take place in Brazil under a licensing agreement. Last year's sales were in excess of Cdn.\$32 million.

EMBRAER is preparing to manufacture a 30-seat pressurized version of the Bandeirante, the EMB-120, which will be powered by Pratt & Whitney of Canada PT-7A-1 1500 SHP engines. In competition with General Electric Corporation of the United States to supply this new requirement, Pratt & Whitney was preferred because of its reputation, established through the PT 6A-34 contracts, for mechanical excellence and because of its commitment to full co-operation with EMBRAER.

#### Market Considerations

Aviation activities in Brazil are controlled by the government. All aircraft projects require the approval of the Air Ministry through one or more of the following departments or organizations.

DAC            -    Civil Aviation Department. Controls and regulates air traffic and airports.

INFRAERO    -    Airport management.



- DEPEDE - Research and development of aerospace industry.
- CTA - Technical Centre-Aerospace. Divided into the following organs:
- (a) IAE - Aerospace Activities Institute
  - (b) ITA - Aeronautical Technical Institute (University)
  - (c) IFI - Industrial Development Institute
  - (d) IPD - Research and Development Institute
  - (e) IPV - Flight Protection Institute.
- EMBRAER - Brazilian Aviation Enterprise. Mixed company, government and private capital (all voting stock controlled by the Federal Ministry of Aeronautics).

The concern of these agencies to promote domestic capabilities points clearly to the need for Canadian businesses to investigate licensing or joint venture arrangements as means of securing an ongoing presence in the Brazilian market. Nonetheless, direct export opportunities do exist in this sector. Exporters should be aware of the following considerations when attempting to sell to Brazil.

1. Products sell better in this sector when included in equipment packages. One way to achieve this is to co-ordinate activities with other potential suppliers who have capabilities in appropriate related equipment.
2. Packages should include an attractive financing arrangement designed to provide a degree of flexibility that is required given Brazil's current economic conditions.
3. Experience has shown that it is preferable to work with a local agent who is in a position to put his knowledge of local conditions to good use. Close contacts with personnel in both industry and government circles in Brazil are also highly advantageous.

#### Competition and Competitor Activity

In 1980 Canada supplied about 74 per cent of Brazil's imports of aircraft engines. The United States was second in engine exports with 15 per cent of total Brazilian imports, Italy was third with 10 per cent and France provided 1 per cent. Piper Aircraft Corporation of the U.S. and Aeromacchi of Italy have both signed licensing agreements with EMBRAER in the past. A recent joint venture arrangement between Aeromacchi and EMBRAER will lead to the joint production of a Brazilian fighter plane of Italian design.



### Action Plan

In recognition of Brazil's declared policy to develop its domestic aerospace industry, measures additional to the normal ones of attending trade fairs and mounting missions are suggested. These measures include developing an inventory of current Brazilian capabilities, particularly in the areas of sub-systems and proprietary parts. At the same time a forecast of the development of Brazilian capabilities over the next five years would be made for comparison with Canadian capabilities. The result would be a series of data packages and capability guides to be provided to Canadian industry showing where opportunity areas lie.

If the results of the foregoing action are sufficiently positive, consideration would then be given to the possibility of seeking a reciprocal arrangement with the Government of Brazil in which Brazil would receive prior consideration for the supply of items that Canada must import in return for Canada receiving similar consideration from Brazil.



## TELECOMMUNICATIONS

### The Opportunity

In 1972 Brazil had slightly over 1.8 million telephone units in operation. By December, 1980, this number had risen to an estimated 7.8 million units, for an average annual growth rate of 17.7 per cent. The Brazilian Government, operating through TELEBRAS (Brazilian Telecommunications Ltd.) and its affiliated telephone operating companies, controls some 97 per cent of Brazil's total telephone system.

The Ministry of Communications, which is responsible for TELEBRAS operations, has responded to recent government austerity programs by curtailing expenditures on Brazil's telephone service. Some 700,000 new terminals per year are required. The government will need to invest heavily in new equipment.

Brazil's domestic manufacturers of electronics and telecommunications equipment have been heavily favoured in government telecommunications procurement practices. Furthermore, even the foreign-owned subsidiaries in Brazil are often placed at a disadvantage when bidding for government contracts. TELEBRAS itself has reduced the ratio of direct industry imports to total investment from 19 per cent in 1975 to 3.8 per cent in 1979. National sensitivity concerning the importance of telecommunications has combined with balance of payments constraints to the point that national firms are often preferred even when the foreign alternatives offer superior technology.

However Brazilian industry, which is large enough to supply most of the country's home entertainment electronics needs, is not capable of providing all the needs of semi-conductor (SC) manufacturing. Even though the government has reserved the domestic market for locally-owned firms, analysts have stated that local production will not be able to meet demand levels for a number of years.

Sixty-six per cent of total semi-conductor demand is for discrete SCs, 20 per cent is in the digital integrated circuits and about 14 per cent is for linear integrated circuits. The telecommunications sector accounts for about 7 per cent of total semi-conductor consumption, or approximately U.S.\$12.1 million in 1979. Local capabilities extend to signal, power and rectifier diodes, regular power transistors, rectifiers, thyristors, TTL Standard logic ICs, and Consumer linear ICs.

A focus for new investment is likely to be conversion from present electromechanical switching systems to digital switching equipment. Old equipment is now being replaced by semi-conductors such as diodes, digital bipolar and MOS integrated circuits. In 1982, the Ericsson company should begin delivery on an order for 50 digital terminals.

The cities of Sao Paulo and Rio de Janeiro are now investigating the feasibility of installing glass fibre optic systems. Brazil's climatic conditions make glass optical fibre extremely useful for telecommunications transmission, particularly since glass fibre is not as adversely affected by humidity as copper wire. Although no concrete plans have yet been prepared, one U.S. company is already negotiating for contracts.

Because rural networks will likely receive less attention, with the exception of systems in place in rural areas of the South, it is expected that mobile radio telephony will provide good market potential, particularly in areas where construction, logging and other industrial activities are developed. The importance of such communications equipment in the Carajas project, for example, should not be underestimated. However, military/police control militates against new subscribers.

Brazil is a member of the Intelsat system and in 1980 spent some U.S.\$6 million for Intelsat services for domestic communications. It is expected that 1981 expenses will reach U.S.\$15 million. In view of the rising costs of these services from Intelsat, Brazil has decided to develop its own domestic communications satellite system (DOMSAT). Although the current cost estimate is U.S.\$71 million for this project, critics of the satellite program have argued that total expenditures could reach U.S.\$360 million.

Most of the equipment needs of the satellite earth stations, particularly of antennas and related equipment, could be sourced from domestic manufacturers. However at the present time local producers can supply only an estimated 2 per cent of total requirements for control station equipment, so that export opportunities could develop in this area. The satellites themselves will be procured from non-Brazilian suppliers.

There may be a possibility to introduce the Telidon System into Brazil should the French Antiope Videotex System not prove satisfactory in its current testing by the Sao Paulo State Telephone Company (TELESP). Other potential customers include newspapers, TV stations and telephone utilities in the states of Parana, Santa Caterina and Rio Grande do Sul. Key decisions on the Brazilian standard for videotex are expected in late 1983.

## Canadian Industry

### Telidon

In 1978 Canada's Department of Communications (DOC) announced the development of an advanced videotex terminal called Telidon, capable of producing images with a much higher resolution than currently available equipment. Superiority is also exhibited in flexibility and compatibility of data bases with different terminals and a designed capacity sufficient for future expansion. In early 1979, Bell Canada initiated a pilot trial videotex system known as Vista, which used the public telephone network to transmit graphic and textual information stored in data banks. Other Canadian firms, notably Norpak, have taken up the Telidon technology and now manufacture a range of Telidon hardware and equipment. Northern Telecom is also considering current market opportunities and could enter some specialized areas of the Telidon field. Canadian Telidon hardware and information services companies are finding early acceptance of this technology in export markets.

As with other videotex systems, Telidon consists of a slightly modified television set or display monitor, an interface decoder device, a telecommunications system, and a central computer. However, Telidon has a microcomputer in all its terminals, exploits fully the recent advances in computer graphics and telecom data technologies, and is uniquely fitted to convert the television set into an information tool.

In addition to Norpak and Northern Telecom, companies developing and marketing Telidon technology include Electrohome producing colour video displays for consumer and commercial applications, Hemton Electronics, now owned by Norpak, supplying Telidon compatible electronic projectors and information providers and Infomart Ltd., the first Canadian company to provide videotex service, with the capability of installing systems, forming information networks, and selling storage and processing facilities.

### Fibre Optics

Fibre optics technology has been utilized in communications systems in Canada since 1976. In the field of subscriber loop plant, Bell Canada conducted a trial in a residential area in Toronto, Ontario, made up of 36 households, to demonstrate the practicability of simultaneous transmission of telephony, data, and television in urban loop facilities under working conditions. In the rural environment an extensive field trial is being co-sponsored by the Canadian Telecommunications Carriers Association (CTCA) and DOC with the co-operation of the Manitoba Telephone System, Bell Canada, and Alberta



Government Telephone, all members of the Trans-Canada Telephone System. Some 150 households will be involved in the small rural community of Elie, Manitoba, making this trial the first for multi-use tests of fibre optic systems in a rural community of this size.

Industry capacity is being further augmented by a manufacturing facility for fibre optic cable and terminal equipment being established this year by Northern Telecom in Saskatoon. Northern Telecom is also currently building a 3,200 km fibre optic transmission system for Saskatchewan Telephone to carry TV signals through the province at a total project cost of \$50 million.

There are other fibre optic field trials underway in Canada involving industry, governments and numerous carriers of which Bell, ACT, B.C. Telephone and Manitoba Telephone also provide consulting services. Alberta Government Telephone, for example, has already begun installing a fibre optic network that will carry some 30,000 voice circuits over 50 kilometres. When in operation, it will be one of the largest high capability fibre optic links in the world with a life expectancy of 30 years. A similar program being undertaken by Saskatchewan Telephone will provide about 32,000 kilometres of fibre optic communications. These latter two projects will be made into operational systems.

Northern Telecom is developing a comprehensive product line in fibre optics, including basic fibre filaments, cable, ancillary electronics, and turnkey systems. Canstar, a subsidiary of Canada Wire, imports Corning glass fibre in order to manufacture fibre optic cable. Phillips Cables also imports Corning fibre for its fibre optic cable. Foundation Instruments Ltd. addresses the more specialized application of computer to computer data transmission by fibre optic cable. It should be noted that most of the above companies, including Northern, are still developing their product or systems technology in fibre optics. Because of the time and cost involved in full commercialization of the technology, joint ventures are considered one potentially viable means of initiating export marketing activity.

#### Terrestrial Microwave/Satellites/Earth Stations

Canada is also self-sufficient in terrestrial microwave telecommunications. Currently there are three major microwave networks using many interconnecting spur microwave links across Canada. Two of these are operated by TCTS at 4 GHZ and one by CNCP Telecommunications at 6 GHZ. In 1980, an additional (8 GHZ) digital radio system was incorporated to overbuild on the existing Trans Canada Telephone System's 4 GHZ analogue system between Toronto and Calgary.

With the launching of the ANIK A series of satellites in 1972, Canada established the world's first geostationary domestic satellite communications system. Three satellites of this version have provided communication services to 10 million square kilometres in Canada. The total system also includes more than 100 satellite earth stations, which play a crucial role in joining many communities through the country. Since ANIK A, a second, third and fourth series of satellites have either been built or are under development in collaboration with U.S. and European industry.

Most of the world's commercial communication satellites carry some form of Canadian mechanical and electronic sub-systems. (In co-operation with the U.S. National Aeronautics and Space Agency, Canada has developed the Remote Manipulation System (RMS) for the space shuttle transportation system.) Spar Aerospace Ltd. is the Canadian prime contractor for satellite and other space related systems, such as earth stations. The other Canadian suppliers of satellite hardware are ComDev Ltd., specializing in multiplex filters, and Canadian Astronautics Ltd., which is developing a satellite battery management system. In communications earth stations, other exporters are SED Systems, Raytheon Canada, Farinon, and Miller Communications.

Canada has had its own national digital data networks since 1973 when DATROUTE was introduced into the Trans Canada Telephone System (TCTS). Introduction of the Infoswitch and Datapac packet followed in 1977. These in turn linked into U.S. systems and should in time, form part of an integrated network for voice, data and visual services across Canada and into the United States. Today, Canadian manufacturers and system companies are involved in the design and development of some of the most sophisticated information processing services. Northern Telecom and AEL Microtel offer a wide range of products for these applications and Gandalf Data Communications is expanding operations as an exporter of data modems and related products.

#### Mobile Radio

Many high frequency (HF, VHF and UHF) mobile radio systems are manufactured in Canada and provide an ever-increasing number of commercial and public services. These systems involve mobile stations, base stations and portables. There is a growing demand for mobile radio telephone systems that interface into telephone networks which provide access from coast to coast. In Alberta, Alberta Government Telephone (AGT) operates the world's largest integrated mobile radio telephone service consisting of 24,000 mobile units hooked up to some 400 base stations. The Alberta private sector also has more than 30,000 mobile units in service. Canadian suppliers of these systems include Motorola Canada, WR

Communications, Spilsbury & Tyndall, International Mobile Data Inc., Westech Systems, Ltd., Glenayre Electronics and International Systcoms Ltd.

Of greatest export interest and potential are low cost HF mobile radios manufactured by Spilsbury & Tyndall, vehicular based mobile telephones by International Systcoms, and Trigild Communications attache case/portable mobile telephones. Control heads manufactured by Glenayre and mobile data terminals manufactured by International Mobile Data are other examples of competitive export products.

### Switching

Premier telecommunications manufacturers such as Northern Telecom and Mitel are now looking more closely at other markets for advanced digital switching products as part of their corporate marketing plans. Both firms manufacture state-of-the-art PABX products which are receiving wide acceptance on export markets. For NT, the SL-1 digital switching system can be installed to serve up to 32 different subscribers. Another NT product is the SL-10 packet switching system which connects a distributed set of data terminals to a single computer or helps create a single common network for a multitude of computers and terminals as part of the DATA PAC packet network of TCTS. Also at Northern is the DMS (digital multiplex switch) family of building blocks from line concentrators (DMS-1) and local office switching up to 6,000 lines (DMS-10) to central offices with potential up to 100,000 lines (DMS-100); toll switching up to 60,000 trunks (DMS-200) and a toll machine specifically tailored to meet international gateway applications (DMS-300).

While Mitel has not yet diversified into the CO switches, its line of PABX products, SX/10/20/100/200 has led to rapid export market expansion. The company also manufactures a wide range of telecom products, designed to improve the technical and operating efficiency of existing telephone exchanges. Other firms producing PABXs for export include Plessey Canada (K1, K2), and ITT Canada (System 3100).

### Recent Canadian Marketing Activity

Canadian participation in the Brazilian telecommunications industry has been limited thus far. A CIDA bilateral loan project established with TELEBRAS has resulted in Canadian service and equipment sales of about U.S.\$2 million during the last two years. Firms involved include Bell Canada International, Spar Aerospace, Telesat Canada, Hewlett Packard, National, Electrolab and Tecktronix. An additional allocation of U.S.\$1 million remains committed but thus far unspent. This program has been helpful in introducing

Canadian expertise to the Brazilian market. An extension of the program is now under consideration which could establish Canadian technology more firmly in the country.

The Industrial Sub-Committee of the Canada/Brazil Joint Economic Commission has identified telecommunications as an area of potential technological transfer. This theme emerges well in a recent CIDA evaluation team report where possibilities of funding training programs and related activities were discussed as a means of encouraging technical exchanges and thus of improving Brazilian understanding of Canadian capabilities.

Spar Aerospace is leading a Canadian bid to supply the space segment for Brazil's new domestic satellite program. The Canadian government has provided extensive support for this initiative through various means including ministerial visits to Brazil, technical assistance and technology transfer, as well as export financing through EDC.

#### Canadian Success Stories

Canadian companies, including Bell Canada International and Spar Aerospace Ltd., have supplied equipment and services in Brazil as a result of CIDA bilateral aid arrangements. In addition, TELEBRAS has purchased more than U.S.\$4.5 million of satellite and station equipment from Spar Aerospace.

#### Market Considerations

Nominal tariff rates on imported telecommunications equipment are relatively high as might be expected in a nation committed to an import substitution strategy for economic growth. In general these tariffs fall within a 45 per cent to 85 per cent range.

No technical standards or regulations are imposed on imported electrical components.

The most effective means to export into Brazil is through the auspices of a local agent who can facilitate importation procedures. Some sales can be carried out through arrangements with local manufacturers but when import restrictions are in place the enthusiasm of these companies to follow through with the time-consuming efforts required to obtain import approval can decline considerably if the import sales constitute only a small share of their total business. This has been found true even in the case of local subsidiaries asked to promote their parent firm's products. It is therefore highly recommended that independent local sales representatives be used instead. Exclusive relationships are to be preferred if export volumes are large enough to warrant such arrangements.



When selling to Brazilian Government agencies, government-to-government negotiations to support the exporter have been found to be very significant. U.S. suppliers have been overlooked in the past in sourcing arrangements in favour of European and Japanese firms which have enjoyed more effective government sponsorship. To the extent that Canadian companies can marshal government resources around their sales efforts, such a strategy is highly recommended, especially in the area of financing arrangements for the buyer. Because of foreign currency constraints the Brazilian government is almost as sensitive to issues of financing as it is to the price and specifications of the individual products in question.

Because of Brazil's pronounced import substitution policies, which are very evident in the strategic telecommunications sector, it may be desirable for Canadian companies to establish local subsidiaries or arrange joint ventures with Brazilian manufacturers. Opportunities will abound for joint-venture arrangements, particularly on a minority share basis, since Brazil is anxious to obtain new technologies and investment capital. However any such joint-venture arrangements should be carefully structured and supported by well developed management agreements to ensure proper use and protection of imported technologies since Brazilian legislation protecting technology patents is complex and cumbersome and local companies, unaccustomed to the cost and effort involved in research and development, have been careless on occasion.

Consulting services in the telecommunications area will be in considerable demand in line with Brazil's interest in assimilating new technologies. It is expected that such services will usually be closely tied to equipment supply agreements.

#### Competition and Competitor Activity

Important international corporations that supply telecommunications equipment in Brazil have taken steps to increase local equity participation in their subsidiaries in order to improve their competitive standing. To date the major multinational firms involved in Brazil include Ericsson (Sweden), Standard Electric (ITT) (U.S.), and the Nippon Electric Company (Japan). The French are serious competitors in both the domestic satellite program (Aerospatiale) and the videotex system (Antiope).

#### Action Plan

The sale of satellite equipment to Brazil will require the use of competitive financing and the continuing support of Canadian government departments and agencies (e.g. EDC, CIDA, DOC). The immediate concern is to follow up Canadian bids on this satellite project. Monitoring of developments and opportunities in the videotex area will be necessary for some time as well as follow up on the incoming mission from TELES P (state telephone company of Sao Paulo) in 1980.



## OCEAN INDUSTRIES

### The Opportunity

Brazil is the most attractive market in Latin America for offshore oil and gas exploration and production equipment. The Government of Brazil has a goal of reducing its dependence on foreign hydrocarbons as soon as possible. Hence, considerable emphasis is being placed on onshore and offshore oil and gas exploration and production. Petrobras, the state oil company, which accounts for virtually all equipment and service purchases, has an offshore exploration budget of \$3.5 billion for the 1981-85 period. In addition, shared risk exploration contracts are being made with multinational firms in an effort to increase further the pace of offshore exploration activities and, hopefully, the production of gas and oil. Seismic studies have shown that offshore deposits are likely to be composed of many smaller deposits. Thus the Brazilian market for drilling and production rigs may prove to be very attractive in terms of the volume required.

Offshore investment will include underwater gathering and pipeline systems, production platforms, float facilities, and storage and upgrading facilities. The trend in Brazil as well as elsewhere is towards the development of deep water production facilities. Petrobras has estimated that the cost of the Campos field permanent production system, located off Rio de Janeiro, will reach \$4.7 billion by 1988. In addition, the production and gathering system of the Ubarana and Agulha fields are being expanded and upgraded at this time.

The expenditure for production facilities over the next decade is expected to continue at the present level as new fields are opened, or present fields are expanded. However, the level of business available to foreign firms may be somewhat limited.

Petrobras has followed Brazilian government policy of buying equipment made in Brazil where possible. To meet this requirement, consortia and joint ventures have been formed. This trend is continuing and it is the government's desire that Brazil will eventually become a net exporter of oil exploration and production equipment. Major international companies have already set up Brazilian companies to serve the domestic market as well as the international market. Nevertheless, it is expected that opportunities will continue to exist to supply sophisticated high technology equipment, support systems, and engineering expertise. In the short term, even low technology items will be imported to support the government's objective of hydrocarbon self-sufficiency because of the limited supply capability at present of local companies.

### Canadian Industry

The ocean industries sector in Canada embraces those companies which supply equipment or contracting and consulting services for the exploration or exploitation of the resources of the oceans. These resources include fresh water extraction, food, wave, tidal, and thermal power and minerals. The industry does not include traditional fishing equipment or marine transportation vessels.

During the last decade, the ocean industries sector in Canada has grown in size, output and technological capacity. Equipment such as drillrigs, sub-sea production systems, sub-sea surveying systems and manned and remotely controlled submersibles have been developed and marketed internationally. With particular reference to Brazilian requirements, these companies offer advanced technical leadership in dry one-atmosphere, sub-sea wellhead completion systems and services, handling problems related to drilling in high water current areas, and in providing manned and unmanned submersibles and services. They manufacture a wide variety of offshore exploration, drilling, and production equipment, and provide corresponding support services, facilities, and maintenance. Expertise is available for geological surveys and seismic equipment and services, for exploration and navigational instrumentation, and for ocean engineering consulting.

Growth in the Canadian industry has been closely correlated with developments in the domestic market which has increased from practically nil in the late sixties to approximately \$75 million in 1980 and is expected to increase to more than \$5 billion per annum in 1990. One characteristic of the Canadian domestic market which creates problems, however, is its cyclical nature. It is therefore essential that Canadian companies develop a capability to sell into the export market, which exceeded \$8 billion in 1977 and is expected to exceed \$20 billion in 1985.

At present there are about 50 core companies in Canada which depend on ocean industries for a majority of their revenues or are exclusively concerned with that market. Total employment for these companies is about 6,000 of which some 2,100 are professional staff with engineering, geological, marine biological or geophysical skills. Total sales of these core companies was about \$600 million in 1980 of which 50 per cent was accounted for by exports.

Typically these companies are Canadian owned, employ highly skilled people, often enjoy an advanced technological position in specific technical areas, and sell low volume custom engineered products or services. Research and development costs are a significant burden in the industry. As well, the long lead times from product inception to actual delivery often lead to financing problems for these companies. Although they must compete with foreign companies generally much larger than themselves, many Canadian firms have achieved significant international success.

A second group of companies in Canada has also sold products to the ocean industries market but its principal markets are in traditional land-based or marine activities. These firms, numbering about 190 separate companies, range in size from a few employees right up to large multinational companies with several thousand employees. In many cases they have adapted their traditional products to meet the demands of this new and growing sector. Their annual sales are now about \$330 million.

In addition, there is a group of tertiary companies offering products or services which can be applied to the ocean industries market. This group's involvement is only now starting as the Canadian domestic market reaches the late exploration phase and early production phase. A large number of these companies are located in Atlantic Canada. The group includes metal fabricators, helicopter operations, catering services, warehouse services, drilling materials suppliers, etc.

#### Recent Canadian Marketing Activity

Canadian companies have been active in the Brazilian market in recent years, including participation in the 1978 Offshore Brazil Trade Show and in the Latin American Oil Show in Rio de Janeiro in 1980. Representatives of Petrobras were invited to Canada in 1977 and 1978.

#### Canadian Success Stories

Canadian companies have supplied more than \$100 million worth of subsea completion systems and drill platforms to Brazil. Successful projects undertaken by Canadian companies include:

- a) subsea production system installed and maintained by Can Ocean Resources Ltd.;
- b) supply of three offshore supply vessels by Genstar Marine, and
- c) construction of a jack-up drilling rig by Davie Shipyards.

### Market Considerations

As mentioned in the Opportunity section, a strong Buy-Brazilian policy is in effect to encourage industrial development and reduce a serious foreign exchange drain. However, Brazil lacks the capability to supply much of the equipment and services urgently in demand in this sector, particularly for offshore oil and gas exploration and development.

It is to be emphasized that Canadian companies can offer advanced expertise to support Brazil's offshore exploration in many areas. Canadian firms enjoy technical leadership, for example, in dry one-atmosphere subsea wellhead completion systems and services, the method which Petrobras has chosen for development of its first offshore oil field. Similarly, Canadian companies have provided technical leadership in the past in overcoming problems involved in drilling in high water current areas. This expertise could be applied to operations in the Amazon Delta.

In the case of large equipment sales, one of the principal considerations in the Brazilian market is the method of financing. Concessionary financing arrangements offered by France have been successful in winning contracts. Other financing methods in Brazil have included barter and leasing. It is expected, based on past experience, that Canadian firms will encounter few difficulties in obtaining Export Development Corporation financing for major projects in Brazil.

High level ocean technology is available in some six or seven countries. Licensing arrangements or joint ventures with Brazilian firms therefore would provide Canadian firms with a competitive advantage since such arrangements will satisfy local participation targets set by the Brazilian Government while still permitting market penetration and the promotion of Canadian technology in Brazil.

### Competition and Competitor Activity

Recent semi-submersibles required for northeast fields have been purchased from Japan and France. However, Brazilian capabilities may be sufficient to permit local construction of semi-submersible rigs by early 1982. Two jack-up rigs required for the Campos field were constructed in Brazil and one other was purchased from Canada.



Brazilian companies active in rig construction and equipment manufacturing are anxious to have the government concentrate more heavily on domestic sourcing. Four local companies, Bardella, Villares, Equipetrol and Vilse have expressed interest in bidding for the construction of the first onshore rigs to be built in Brazil. Another Brazilian company, NOBARA, has formed a joint venture with Baker International to build the first Brazilian offshore rig for export.

Several foreign firms have expressed interest in forming joint ventures in Brazil for the purpose of manufacturing drilling equipment. Currently under consideration is a Snamrogetti/King Wilkinson venture for platform construction and U.S.\$300 million Ishibras project for rig construction in Rio de Janeiro. Hughes has also indicated that it will build a U.S.\$22 million plant in Rio to manufacture drill bits, submarine wellhead equipment, connectors and submarine "Christmas tree". Sales are expected to total some U.S.\$30 million annually. Hughes' investment did not qualify for project incentives so no import incentives for equipment imports will be granted. The Hughes operation is expected to export a portion of its output to Africa and other Latin American countries. Hughes also has plans to build another installation near the Campos basin to repair field equipment and service platforms.

#### Action Plan

To capitalize on these opportunities it will be necessary to:

- a) follow up on the previous incoming Trade Visitors Missions of 1977 and 1978 and previous participation in the trade shows in Rio in 1978 and 1980;
- b) maintain Canada's presence at the Latin American Oil Show in Caracas in 1982. (Petrobras will be there);
- c) sponsor an Ocean Industries Mission to Brazil (Oil and Gas Development) in 1983 to reinforce previous approaches to Petrobras and foreign multinationals;
- d) call upon Petrobras' Houston office to discover new procurement requirements;
- e) establish lines of credit with EDC to promote sales in this sector;
- f) further utilization of CIDA's industrial co-operation program for smaller firms in this sector;
- g) investigate joint venture possibilities with qualified Brazilian partners in this national priority sector.





## CHEMICAL AND PHARMACEUTICAL PRODUCTS

### 1. Potash

#### The Opportunity

Brazil is Canada's largest export market for potash after the United States, importing just over \$80 million of Canadian potash in 1980, and doubling the level of the previous year. Brazil does not yet produce its own potash but is investigating the possibility of opening a mine in 1983 which could be capable of producing from half a million to one million tonnes of potash per year. It is estimated, on a tonnage basis, that Canada held a 40 per cent share of Brazil's potash market in 1978. Brazil's imports of potash dropped 40 per cent in 1981 due to the reduction in government subsidies for fertilizers and because of stocks that had built up in 1980.

The Brazilian market potential for all fertilizers, particularly potash, is largely unrealized as yet but is expected to grow rapidly as the agricultural sector gains in importance. According to the strategy outlined in Brazil's Third National Plan the agricultural sector is expected to grow faster than the industrial sector through 1985.

#### Canadian Industry

Canada is a world leader in potash production, providing 30 per cent of the world's potash. Canadian production is expected to increase from 11 to 22 million tonnes of potassium chloride between 1980 and 1990. Virtually all Canadian production (more than 95 per cent) is exported. At present, all Canadian potash is mined in Saskatchewan but two mines are being developed in New Brunswick. Potash Corporation of America is developing a mine which is scheduled for start-up in 1982. The other mine is a joint venture by Denison Mines which will look after production, and European interests which will be responsible for marketing. This mine is scheduled for start-up in 1984. A mine in Manitoba may possibly be developed as well, with start-up in 1986.

There are seven potash producers operating in Saskatchewan. One of them, Potash Corporation of Saskatchewan (PCS), a provincial crown corporation, controls just under half of Canadian potash production.

### Canadian Marketing Activity

Canpotex is a Canadian export consortium currently consisting of five of the seven producers. A major change to the industry marketing activities will occur on June 30, 1982, when PCS withdraws from Canpotex and undertakes its own marketing in offshore markets.

Canpotex maintains an office in Brazil because of the size and potential of the market. Canpotex also operates a shipping company that time-charters vessels for potash shipments.

### Market Considerations

The presence of a Canpotex office in Brazil is a commercial advantage and allows for the provision of on the spot technical expertise to local buyers. The Brazilian fertilizer industry uses bulk blending techniques which in turn require coarse granular potash. Canada has an advantage over European suppliers in the supply of this grade. Future supplies of potash will likely come from New Brunswick mines starting in 1982 or 1983. These mines will be better located for shipping to Brazil than Saskatchewan mines. The main impediments to increased trade are:

- a) potash is a hard currency commodity and Brazil has foreign exchange problems;
- b) the imbalance between supply and demand for coarse and fine grades of Canadian potash (coarse is preferred, more expensive and less available);
- c) because of Brazil's deficit in trade with Canada, together with difficulties Brazil has in fulfilling bilateral trade agreements with Eastern Europeans (especially GDR), authorities are favouring GDR potash imports by providing import financing;
- d) Brazilian Government reduction in subsidies for fertilizer purchases.

### Competition and Competitor Activity

Canada's competition for the Brazil potash market comes from Germany (East and West), France, the U.S.S.R. and the U.S., although the U.S. is declining as a competitor. Potash is traded as an international commodity and competition is very aggressive.

### Action Plan

Canadian potash exports to Brazil are already significant and represent 40 per cent of that country's consumption. The expectation is that the sector will continue to show a strong performance. Since potash is an international commodity, no direct commercial involvement by government is indicated and conventional promotional activities such as fairs and missions are not applicable. However, at regular intervals the strengths of the Canadian industry should be reviewed by Canadian officials with Brazilian government officials and major buyers. This activity should be co-ordinated with Canadian exporters.

It may be possible to provide indirect support to potash exports by making contributions to the Brazilian infrastructure concerned with the distribution and consumption of potash in areas such as bulk handling, storage, transportation, compacting and regrinding, bulk blending, bagging and wholesaling/retailing. In addition, any efforts directed towards the increased use of fertilizers, whether through agricultural education or local government programs would have beneficial effects on exports. CIDA could provide assistance in improving agricultural education.

## 2. Sulphur

### The Opportunity

Brazil does not produce its own sulphur. Canada has been the leading exporter of sulphur to Brazil for several years, followed by the United States, Poland and Mexico. Canada held 55 per cent of the 1979 Brazilian import market, with exports of 364,000 metric tonnes.

There is every likelihood that Canada's strong export performance with Brazil will be maintained. An increased emphasis on agriculture would result in increased phosphate fertilizer consumption which would, in turn, require increased sulphur imports.

### Canadian Industry

In 1980 Canada produced approximately 6.2 million tonnes of elemental sulphur, 95 per cent from sour natural gas and the remaining 5 per cent from oil sands and from oil refineries. About 1.6 million tonnes were withdrawn from stockpiles in Alberta and British Columbia. Thus the total elemental sulphur available was about 7.8 million tonnes. Offshore exports were 5.4 million tonnes. Over the past decade, Canadian production of brimstone exceeded

shipments with the result that there is now a stockpile of about 18.5 million tonnes, almost all in Alberta. Canadian production of sulphuric acid from smelter gas in 1980 was about 2.7 million tonnes (or about 900,000 tonnes of sulphur equivalent). Of this, 324,000 tonnes was exported.

Canadian sulphur is marketed by a number of organizations, brokers, agents and producers. Ten marketing concerns exist for offshore (i.e., other than to the United States), with the largest of these being Cansulex Limited. This company was incorporated in 1962 and now has 16 members. These shareholders do not receive dividends and no earnings are retained in the company. Total sales revenue, after shipping, handling and administration, is paid to each member based on its delivery of sulphur to the Cansulex sulphur pool.

The major end use of sulphur is for the production of phosphate fertilizers. Sulphur is converted to sulphuric acid which is then reacted with phosphate rock to produce phosphoric acid, a precursor to phosphate fertilizers. Demand for phosphate fertilizer strongly influences demand for sulphur. Historically, growth in the world's annual sulphur consumption rate is about 3.5 per cent.

#### Canadian Marketing Activity

Canadian sulphur is marketed in Brazil, and internationally, on the basis of price, quality and security of supply. After wheat and potash, sulphur is Canada's third largest commodity export to Brazil (\$59 million in 1980). Cansulex operates a sulphur pool for its members. By demonstrating a large and reliable supply base, Cansulex has secured numerous long-term sales contracts.

At present, Cansulex, Amoco and Texasgulf are exporting sulphur to Brazil from Canada.

Cansulex time-charters vessels for sulphur shipments and occasionally a sulphur cargo shares a vessel with potash. Time-chartering a vessel occurs when an exporter leases a vessel for a specialized period (e.g., two years) rather than contracting for cargo space on a per trip basis. Substantial tonnages are required if time-chartering is to be practical.

#### Market Considerations

An advantage to Canada is that Brazil is a large natural market in the western hemisphere. It is also well located for the U.S. and Mexico but the U.S. is a net importer of sulphur and Mexico is not as active as Canada in exporting sulphur to Brazil.



### Competition and Competitor Activity

There are a limited number of world suppliers of sulphur. The major exporters are Canada, Poland, U.S.S.R., France and Mexico.

In the Brazilian sulphur market, Canada maintains the largest market share, which is growing. Poland, a major supplier to Brazil, has serious production problems in addition to its current general economic crisis. The U.S. share has slipped over the past three years. With additional U.S. sulphur production coming on stream over the next few years, increased sales to Brazil may occur. Saudi Arabian sulphur production is expected to come onstream in about a year. Until their recent war, Iran and Iraq produced sulphur from both mined sources and petroleum refining. It is uncertain when they will again participate in world sulphur exports. Middle East countries consume very little of the sulphur they produce; most is exported. Mexico has not yet presented serious competition to Canadian domination of the Brazilian sulphur market. However, Mexico has significant resources of sulphur both from mining and petroleum refining and if production problems can be overcome, it could become a major exporter of sulphur to Brazil. Nevertheless, Canada is expected to maintain its strong competitive position as the leading exporter of sulphur to Brazil.

### Action Plan

Since sulphur is an international commodity, conventional promotional activities such as fairs and missions are not applicable and no direct government intervention is indicated. However, because of the importance of Canadian sulphur exports to our trade with Brazil, progress should be closely monitored. It may be possible to provide support to sulphur exports through government-to-government contact. Canadian visibility needs to be maintained.

## 3. Pharmaceuticals

### The Opportunity

Brazil is one of the largest markets in South America for health care products. It has a very large and well developed pharmaceutical industry, both domestic and multinational. Brazil has high tariff barriers and has some shortcomings in health care system infrastructure.

The best Canadian export possibility is represented by vaccines produced by Connaught Laboratories Ltd. Connaught already has Brazilian experience in a joint

venture and in exports, and is actively pursuing opportunities there. There may also be modest opportunities in the future to supply bulk materials (antibiotics).

#### Canadian Industry

This industry comprises some 120 companies, with about 140 establishments and employment of the order of 15,000. The major concentration of manufacturing is in Ontario and Quebec. The industry is very largely foreign-owned and composed of subsidiaries of multinational corporations, mostly of United States, British and Swiss origin, which account for about 65 per cent of the companies and for more than 90 per cent of the market.

The largely domestic market orientation of the sector has resulted in relatively low exports. In 1980 only \$89 million of pharmaceutical products were exported (7.5 per cent of shipments), while imports amounted to \$365 million or over 25 per cent of the market. While no detailed statistics are available, it is estimated that about 50 per cent of imports comprise active drug ingredients, the balance being formulations. The total Canadian market is expected to be in the \$1.8 to \$2.3 billion range in 1985. Over the same period, the world markets are forecast to reach \$90 billion a year of which about 20 per cent will be accounted for by North America and 2-2.5 per cent by Canada.

#### Recent Canadian Marketing Activity and Success Story

Connaught Laboratories has two joint ventures currently active in Brazil. The first of these, Alpha-Connaught, in Manaus, produces equine rabies virus vaccine from seed virus imported from Canada. The bulk vaccine then goes to Levas-Connaught, the second joint venture, for dilution and freeze-drying prior to final packaging and distribution. This undertaking is primarily one of technology transfer, albeit with Canadian equity participation; there is also a minor element of export involved with the periodic replacement of the seed virus in the vaccine production process, but this is a smaller aspect of the operation.

#### Market Considerations

The nationalistic policies of the Brazilian government in the health care field are manifested in price controls and high tariff barriers on finished goods. The government is

also looking for ways to reduce the number of products in the marketplace and is supporting Brazilian firms in import replacement. These policies will not encourage multinational concerns to increase their investment, and this may indirectly result in export opportunities in selected product areas where the multinational influence is diminished and local expertise has not developed sufficiently. Connaught, in having a joint venture presence in Brazil, is in a good position to avoid the impact of some of these problems.

#### Competition and Competitor Activity

The Brazilian pharmaceutical industry is well developed with both local firms and a strong representation of multinational firms. In addition, there are import contracts of bulk pharmaceuticals from eastern bloc nations at prices far lower than western countries can supply. The environment is very competitive given the relatively pessimistic outlook for the foreign-based segment of the industry. There are no dramatic changes occurring in the Brazilian pharmaceutical market and the current outlook is for rationalization and consolidation. The prospects for Canadian exports are good in areas where Canadian firms have a demonstrated technical advantage (as in vaccines).

#### Action Plan

The key issue for Canadian firms is to securely position commercially viable products into local market niches by virtue of the technological advantages of those products.

The principal means to encourage such efforts are through routine assistance to the firms concerned, by keeping the post advised of the latest developments in health care and by supporting incoming and outgoing missions under PEMD. Another means by which to forge links to the Brazilian medical market is by sponsoring educational programs for medical and paramedical professionals. In terms of export results, nominal growth should be expected as the Brazilian health care delivery system infrastructure continues to develop.



## AGRICULTURAL AND FOOD PRODUCTS

### 1. Cereal Grains

#### The Opportunity

Wheat was the largest component of Canadian exports to Brazil in 1980, accounting for more than \$400 million of total exports of almost \$900 million. This value represented a Canadian market share of 38 per cent of total Brazilian wheat imports.

Brazilian domestic production of wheat is unlikely to increase significantly to displace imports in the future. Wheat production is suited to a limited geographic area in Brazil and is in competition with other crops such as barley for land and farm input resources. Furthermore, the costs of production of wheat in Brazil are high compared to those of imported wheats.

Consumption of wheat in Brazil in 1981 should approach the 1980 total of 6.8 million tonnes, requiring imports of approximately 4.3 million tonnes. Under the terms of the long-term agreement between Canada and Brazil, Canada will supply a minimum of 700,000 tonnes and a maximum of 1.0 million tonnes in 1981. In 1982, the final year of the current agreement, Canada will supply a minimum of 500,000 tonnes of wheat with a possible additional 300,000 tonnes at Brazil's option.

In spite of possible Brazilian government measures to reduce wheat consumption, it is expected that Brazil will continue to import large quantities of wheat. The Canadian Wheat Board has a sound relationship with the Brazilian wheat board, the Junta do Trigo, and Canada is likely to remain competitive in this market. Sales are on government-guaranteed three-year credit terms.

#### Canadian Industry

The major Canadian cereal grains in order of commercial importance are wheat, barley and corn. Annual production has approximated 20 million tonnes for wheat, 10.5 million tonnes for barley, and 5 million tonnes for corn.



In terms of volume, wheat dominates Canada's grain export trade with exports of approximately 15 million tonnes annually, including durum, accounting for 60 to 70 per cent of production. Wheat flour exports have been stable over the past ten years averaging 650,000 tonnes annually.

The major government agencies involved in the marketing of Canadian grains and oilseeds are the Canadian Wheat Board (CWB) and the Canadian Grain Commission (CGC). The CGC is responsible for grading and quality control of grain and for the supervision of its handling. The CWB is the sole export marketing agency for Prairie wheat, oats and barley. Export sales are either negotiated directly by the board or through grain exporting companies acting as its agent. Eastern grains, including Ontario wheat, are exported by grain exporting companies under permits issued by the CWB. Other crops, such as rye, rapeseed, flaxseed, buckwheat and mustard, are marketed by the private grain trade.

The Canadian International Grains Institute (CIGI), 60 per cent funded by Industry, Trade and Commerce and 40 per cent funded by the CWB, is an important promotional agency whose purpose is to help maintain and enlarge domestic and export markets for Canadian grains, oilseeds and their products. CIGI offers instructional programs to foreign participants selected from countries purchasing these commodities and to Canadians associated with the grain industry.

The capacity of the Canadian grain handling and transportation system has been substantially improved in recent years by such government-funded measures as the purchases of 14,000 rail hopper cars and an ongoing rail branch line improvement program. Private sector-funded expansion such as the Pioneer Grain Company terminal in Vancouver and construction of high throughput country elevators has also contributed greatly to the capacity and efficiency of the system. The 1981 crop acreages are an indication that Canadian producers are rising to the challenge of current and future export markets which, in the estimation of the CWB, will present an opportunity to export 36 million tonnes of grains and oilseeds by 1990.

#### Recent Canadian Marketing Activity

The Canadian Wheat Board maintains close contact with Brazilian authorities through frequent visits to Brazil on missions related to both long term agreements and matters of a technical or logistical nature.

Senior officials of the Brazilian National Supply Agency, Superintendencia Nacional do Abastecimento (SUNAB), visited Canada in June of 1981 as guests of the CWB for meetings with the CWB and government officials, members of the grain trade, and tours of grain handling and shipping facilities. The mission enabled officials of both governments to improve their understanding of the other's organization and functions with respect to the grain trade.

Brazilian government and trade officials have attended recent international grains courses sponsored by the Canadian International Grains Institute in 1979, 1980 and 1981.

There has also been some related marketing activity concerning Brazilian grain storage and handling facilities. The Canadian Government has made available a total of \$10 million for construction of grain storage facilities in Brazil at the ports of Maceio and Rio. A representative of Cibrazem, the Brazilian storage company arm of the Brazilian Ministry of Agriculture, visited Canada in June, 1981, to examine Canadian grain storage and handling facilities and technology. An Alberta engineering firm is currently preparing a proposal to build, in joint venture with Brazilian firms, a grain storage silo as a pilot project for Cibrazem. Future developments involving the export of Canadian technology in this field should enhance Canada-Brazil grain trade relations.

#### Significance to Canada

Brazil is one of Canada's most important regular markets for wheat, ranking seventh in terms of export volumes over the past three crop years. Exports to Brazil accounted for roughly 7 per cent of total Canadian wheat export volumes. Brazil is also a major market for Canada Western (3 CW) and utility grades of wheat, unlike many of Canada's major markets.

#### Market Considerations

While efforts of the Government of Brazil to reduce wheat imports stand as the major potential impediment to Canadian grain trade with Brazil, large reductions in imports in the near future are not expected in view of the size of the 1980 and 1981 wheat crops in Brazil and the possible political consequences of a complete withdrawal of Brazilian wheat price subsidies.

Transportation logistics and costs are seen to be the major impediments to Canadian malting barley and malt exports to Brazil for the growing market which exists. However, results of the recent UGG mission to Rio and Sao Paulo indicate that the freight rates applicable to transportation of 2-row barley in bulk from Canada to Brazil may be approximately U.S.\$35 per metric ton and thus competitive with the barley shipped from Australia and European ports (the latter subsidized by EEC). Although the success of the Brazilian Government's National Plan for self-sufficiency in barley (instituted in 1977) may reduce the Brazilian import requirements substantially in the long term, in the short to medium term, the size of the Brazilian malting barley imports will be limited only by the rate of expansion of the Brazilian malting industry's capacity.

Non-Latin American exporters of barley to Brazil face duties of 15 per cent while barley imports from Latin American countries are duty free. However, the tariff does not appear to be an obstacle to Australia's sales of malting barley to Brazil.

Canadian malting barley is currently being exported to other countries in South America and is competitive in price and quality with that of Australia and the EEC. It is anticipated that as Brazil's imports of malting barley increase, Canada will secure a share of this market. The major difficulty appears to be the protein content of Canadian barley (usually 13 per cent), whereas Brazilian breweries generally accept a maximum of 11.5 per cent. Brazilians have concern that higher protein content will affect the flavour of local beers.

#### Competition and Competitor Activity

Canada's competitors in the Brazilian wheat market are the United States and Argentina. In 1980, the U.S. supplied 51 per cent of Brazilian wheat imports. Argentina supplied only 11 per cent of 1980 Brazilian wheat imports, down from a market share of 40 per cent in 1979 and 34 per cent in 1978.

The United States and Argentina are well represented by private companies in Brazil. The governments of both competitors are involved in wheat sales, with the U.S. providing commercial credit terms and Argentina normally dealing on a government-to-government agreement basis.

The principal suppliers of malting barley to Brazil are Uruguay, Argentina and Australia. The principal suppliers of malt to Brazil are Argentina, Chile and Uruguay.

### Action Plan

Continuation of the current volume of wheat sales to Brazil and penetration of the Brazilian market for other grains and grain products will require the following:

- a) Maintenance of the existing favourable supplier/purchaser relationship between the CWB and the Junta do Trigo through the continuation of visits of CWB and government officials, ministerial visits, general consultations and meetings and exchanges of information.
- b) Continuation of promotional activities in the form of incoming and outgoing missions and participation of Brazilian government and industry representatives in CIGI courses and seminars, including the proposed international brewing and malting courses in 1982/83. Malting barley exporters visited Brazil in the spring of 1982.
- c) Promotion of exports of Canadian malting barley and malt, initially through consideration of the mounting of a departmental/industry mission to South America to assess the markets in terms of product quality requirements, handling and storage constraints, opportunity for foreign expansion by Canadian maltsters and to generally develop contacts with Brazilian brewing companies and independent grain agents.
- d) Assessment of suitability of Eastern Canadian malting barley for Brazilian use in order to reduce freight costs of potential barley exports to Brazil, especially to Antartica Brewery in Sao Paulo who would accept a higher protein content for blending.
- e) Investigation of shipping and handling services for malting barley and malt in Brazil and Canada to assess the potential for overcoming freight rate and handling impediments which at present act as a constraint to Canadian exports of both these commodities.
- f) Consideration of joint talks with appropriate Brazilian and Canadian industry and government representatives to examine the feasibility of a program combining technical assistance and co-operation with respect to barley production, transportation, malting and handling.



## 2. Livestock and Genetic Material

### The Opportunity

Traditionally Brazil has been a net importer of semen and live animals for breeding purposes and is expected to remain so for the foreseeable future. Imports of live cattle, both for dairy and beef herds, amounted to U.S. \$17.7 million in 1979, up from U.S.\$13.5 million in 1976 and U.S.\$9.5 million in 1977. Canadian cattle sales accounted for about 6 per cent of this import total in 1979, down from about 10 per cent in the 1976-78 period and far behind the leaders, Argentina and Uruguay, which together account for 79 per cent of 1979 Brazilian cattle imports. Canadian shipments of beef cattle have been insignificant in spite of ITC marketing activity but dairy businesses have proved a ready market for Canadian Holstein-Friesian cows which enjoy a reputation for very high quality in Brazil. Some imports of Canadian Jersey cattle also turn up in the import statistics.

Investment in dairy herds in Brazil is largely dependent on the profitability of milk production. But the price of milk is set by the government and recent price increases have not kept pace with inflation. There are no marketing boards as such in Brazil so that the dairy farmer has been squeezed between rising production costs and fixed prices for his produce. The result has been a fall in dairy production and in 1980 Brazil became the world's largest importer of skim milk powder. Canada sold \$1.6 million in skim milk powder to Brazil in 1980. Imports of dairy animals in 1980 fell 50 per cent from 1979 levels.

Investment plans in the cattle raising sector are also affected by the availability of Brazilian government credit, which accounts for more than 77 per cent of all funds available for agricultural financing. Dairy and beef breeders received a total of \$500 million in subsidized financing in 1980. This represented an increase of 18 per cent as compared with 1979, yet inflation registered 110 per cent in 1980. There was thus an effective drop in real terms in the volume of financing available for cattle breeders. A number of support measures have been announced over the past two years to try to compensate in part for the drop in available financing. For example, the proportion of the purchase price of the animal which the government will finance has been increased. Brazil's present five-year plan supports higher growth rates for the agricultural sector than for the industrial one.



Brazil has imported breeding swine regularly except for a brief hiatus owing to an outbreak of African swine fever. The national herd numbers about 36 million, down 6 per cent from the 1971 level. Imports of swine breeding stock have tended to come from European countries, particularly Germany, France and Belgium, which may reflect the European training of many Brazilians involved in the swine industry. However, the number of imported animals has tended to be small, reflecting the relatively low level of development of much of the Brazilian industry. In 1979, the first normal year following the African swine fever epidemic 1,272 animals were imported. Eight animals including five Large White were imported from Canada. Imports from France, however, numbered no less than 1,254 in the same year, composed equally of Landrace and Large White animals. Duroc is the only other breed of any consequence in the import statistics for Brazil.

Animal semen, principally bovine dairy semen, has been an important component of Canadian agricultural exports to Brazil for some years. In 1980 Canadian exports reached Cdn.\$680,000, an increase of Cdn.\$45,000 over 1979 exports. Total semen imports amounted to U.S.\$3.5 million in 1979, up from the annual average for the preceding three years of U.S.\$1.7 million. This increase was achieved despite the heavily devalued cruzeiro and the imposition of a 25 per cent foreign exchange surcharge on imports and other Brazilian government measures to restrict imports. The continued growth of the market for semen is virtually assured since there is at present a great need to upgrade the genetic quality of the Brazilian dairy herd and imported semen is an attractive alternative to the cost of importing livestock.

At the same time it is important to note that little official sponsorship and no agricultural credits have yet been provided in the area of artificial insemination for Brazilian herds. Although approving of artificial insemination as an efficient means of improving bloodlines at low cost, the government has not provided any special programs. Indeed, in 1976 government-run centres for artificial insemination were closed as an economy move. At this time only 5 to 6 per cent of Brazilian cows are artificially inseminated against a developed world average closer to 50 per cent.

An alternative to semen is importation of live animal embryos. At present there are no large-scale embryo transplant operations anywhere in Brazil. A German firm is reputed to have started operations only to terminate because of a low success rate in its transplants.

Activity therefore is currently restricted to experimentation at agricultural schools and by individual ranchers. It remains to be seen what advantages embryo sales could offer against live animal importation since there are substantial costs involved in embryo extraction, preservation, shipment and in post implantation care of the recipient animals.

### Canadian Industry

The Canadian livestock industry is spread across the country. Dairy cattle are concentrated in Ontario and Quebec, beef cattle in the three prairie provinces. Most breeding stock is produced by fairly small family-owned and operated farms throughout the country.

Most exports of live animals are handled by private firms that specialize in livestock exporting. These firms purchase animals from breeders, assemble the animals, prepare the necessary documentation, and make all the shipping arrangements. There are somewhat over a dozen major exporting firms. As well, there are a few large-scale breeders who also export animals, mostly their own, but the number exported in this manner is relatively small. Finally, there is some provincial government involvement in the actual exporting of livestock; for example, the Saskatchewan Agricultural Development Corporation (a provincial Crown corporation) and the Manitoba Department of Agriculture are thus involved. Most other provincial governments limit their export involvement to promotional activities.

Most of the semen that is exported from Canada is produced by farmer-owned co-operative artificial insemination (A.I.) centres across the country. There are a few private A.I. centres, but the majority are co-operatives. Also, some breeders send their bulls to A.I. centres for custom collection and processing for a fee, then market that semen themselves. Most of the A.I. centres in Canada market their semen (for markets other than the United States) through an organization called Semex Canada.

Embryo transplanting is relatively new. Only two firms, one in Ontario and one in Alberta, have done much exporting. The transferring of embryos in a liquid medium is fairly commonplace, but the use of frozen embryos is not yet fully established. Once the freezing-thawing technique is perfected the export potential will be greatly increased. Canada's technological expertise in this area ranks high.

Canadian capability for increasing the supply of breeding animals and other genetic material is very good. The Canadian industry seems in a position to meet any expected demand without problem, except possibly with respect to sheep and the minor dairy breeds such as Ayrshire, Jersey, and Guernsey. About 90 per cent of Canada's dairy cattle exports are of the Holstein-Friesian breed.

#### Recent Canadian Marketing Activity

In 1979 Canadian livestock producers had a 6 per cent share of total Brazilian livestock imports, down from 10 per cent a year earlier; a 22 per cent share of imported animal semen, unchanged from 1978; and a very small share of the swine market. Canadian exporters have been assisted to a considerable degree by their agents, various industry associations and by ITC promotional activities. In 1978, Industry, Trade and Commerce organized a series of three cattle seminars in various Brazilian livestock areas. These seminars served to highlight Canadian expertise in dairy cattle breeding and brought the Canadian representatives into contact with many cattle breeders in Brazil's major dairying areas.

On occasion when state government dairy improvement programs have been involved, the ITC Incoming Buyers Program has been used to bring Brazilian officials to Canada to inspect dairy herds and sign purchase contracts. Valuable exposure was given Canadian Hereford herds as well in November 1980 during a tour of Canada by the Brazilian Hereford Association which included a visit to the Agribition in Regina. As a result eight Herefords were purchased by the Brazilians.

Canadian participation in the biannual Porto Alegre Cattle show has served to publicize Canadian cattle and establish or renew contacts with Brazilian breeders. The ITC post at Sao Paulo initiated the use of mini stands in regional shows such as Curitiba.

Recent Canadian activity to promote swine has taken the form of an ITC sponsored visit of six leading Brazilian swine breeders in October 1979 to Canada and similarly financed visits to Brazil by representatives of three prominent swine breeders associations in early 1980. Canadian participation in the Curitiba Livestock Show in October 1981 included a display of 30 swine, over half of which won prizes.

Canadian activity in the semen field is carried out largely by two firms, Semex and Semaltex, who operate in Brazil through a number of agents. Both firms rely on

frequent periodic visits by their representatives to their Brazilian agents and their major customers. On occasion the Canadian visitors have staged seminars and demonstrations of Canadian insemination techniques in various places in Brazil. In many cases they attend regional livestock shows and meetings of breeder associations to meet buyers and discuss business.

As a result, Canada has more than held its market share in recent years. A new computerized sire matching system is to be placed in operation this year by Semex and will enable a Brazilian buyer in a Semex representative's office to match his cows quickly with the most appropriate type of bull to maximize certain genetic characteristics. The U.S. has a similar system in effect but does not have instant response facilities. Semex representatives think that this system will give Canadian producers a decisive edge in this market.

d) Canadian Success Stories

Brazil has been a very good market for Canadian Holsteins since 1970 and Canadian stock continues to enjoy an excellent reputation, facilitating ongoing sales in the premium market.

Two shipments of Suffolk sheep from Canada came about as the result of the visit of the President of Cafe do Parana, the state import agency of Parana, to the Royal Winter Fair in Toronto in November 1979. His excellent relationship with Shore Farms enabled him to put together a shipment of top quality animals in the summer of 1980. The main ingredient of success in this business was the excellent service provided by Shore Farms in allowing the Brazilians to visit Canada and individually select the animals they wished to import. This personalized treatment is indispensable in many cases in Brazil for this type of business.

The success of Semex and, to a lesser extent, Semaltex in semen sales is due to a combination of having stocks of the finest quality bloodlines particularly in the dairy sector, along with the latest technology, good customer relationships through some of Brazil's best A.I. centres and, in Brazilian terms, a relatively secure supply system from Canada. The frequency of customer visits by Semex representatives is responsible for a very high degree of awareness of Canadian capability in this area.



### Marketing Considerations

Imports of animals and semen in the past have required authorization from the Brazilian Department of Agriculture. As part of Brazil's overall import regime, importers are also required to secure import permits from the import-export division of the Bank of Brazil (CACEX). In effect the approved level of imports by individual importers is a function of actual imports in the previous year. CACEX has indicated informally that importers who also undertake to export will have an easier time getting approval for their imports. In the case of livestock importers, however, very few if any are involved in exports since Brazil does not have a sufficiently good genetic pool for a receptive market to exist overseas. Consequently, delays in obtaining import approval have been a problem in Brazil.

Apart from these non-tariff barriers to trade, Canadian exports have been affected by rising air freight costs, a problem which does not affect competitor nations such as Argentina and Uruguay to the same extent. Most troublesome is the problem involved in securing cargo for the back haul route to Canada. Animal shipments are delayed until return air cargos are secured or alternately freight costs are increased to cover the return trip. The imposition of a general 25 per cent surcharge on foreign exchange to pay for imports has, of course, added substantially to the cost of Canadian exports as has the devaluation of the cruzeiro.

These market impediments applying to live animals have less impact on semen exports. Other factors which on occasion have rendered sales difficult in this area include periodic shortages of liquid nitrogen to preserve semen ampoules, delays at customs on shipments from Canada for obscure reasons, and lack of skilled personnel in some regions to perform routine insemination on cattle. In the area of swine semen, there have been difficulties in teaching Brazilian technicians how to use frozen semen. This, however, is being corrected through a series of seminars by Semex.

Arranging cattle sales on a breeder-to-breeder basis is at best difficult. The use of qualified agents in Brazil is a preferred approach. A large degree of personal contact between agents and Brazilian breeders is essential. The United States has tended to make use of agricultural scholarships and technical seminars to get breeders to think American in their buying. However, resentment has been growing in some ranching quarters in Brazil that the



Americans have monopolized the supply of high quality bloodlines for too long. Perhaps for this reason there are a number of Brazilian agents who have indicated an interest in representing Canadian beef breeders once economic conditions improve.

Canada is a latecomer to the Brazilian swine market. On the basis of conversations to date, it appears that the Canadian Yorkshire and Landrace pig have the most appeal to Brazilian breeders. Certain genetic characteristics of these breeds make them desirable in cross-breeding programs with other breeds of swine.

Purchasing of sheep in Brazil in recent years has been done either by state government import agencies, such as Cafe do Parana, or farmers' co-operatives. Government sponsored purchasing is done by an agency which purchases abroad, imports and resells the animals to local farmers using subsidized credit provided by the Brazilian Federal Government. There is no continuing market as yet however. Sales are made whenever a sheep acquisition program is announced.

#### Competition and Competitor Activity

Competition for Canadian breeders in this market comes from the United States primarily. Argentine and Uruguayan exports are generally lower quality animals which do not usually compete directly with the Canadian stock. Assorted European producers, principally from France, West Germany, and The Netherlands have supplied small numbers of animals on occasion. Data for 1979 reveal that American exports of Holstein-Friesians reached 691 animals while Canada exported 483. In 1980, reflecting the deteriorating balance of payments situation in Brazil, sales fell to 18 animals for the U.S. and 197 for Canada.

The U.S. has been undertaking considerable publicity for its dairy cattle industry in Brazil by way of extensive direct mailing campaigns to Brazilian breeders and increased participation in regional cattle shows and other agricultural events. The Argentine and Uruguayan breeders enjoy the advantage of proximity to Brazil and are able to maintain close contact through frequent visits and participation in many more Brazilian agricultural events than would be possible for Canadian or American breeders. Argentines and Uruguayans also have the advantage of speaking a language which is relatively close to Portuguese and understood by most educated Brazilians.

In the dairy semen sector, it would appear that the Canadians have relatively little competition apart from the U.S. owing to the superiority of Canadian bloodlines and the effective distribution network in place. Because of the relative fragmentation of the Canadian beef semen sector and the tendency of some of the best producers to market their semen independently, it seems unlikely that Canada will seriously challenge U.S. dominance in beef cattle semen.

#### Action Plan

Export development activity by all three posts in Brazil must be maintained at current levels, and resources of the Fairs and Missions Program of External Affairs should be made available when requested for Canadian participation in agricultural shows and exhibits in Brazil. The posts will endeavour to keep up the flow of publicity materials to agricultural associations and individual breeders. Funds have been allotted for Canadian participation in the Porto Alegre Cattle Show in August, 1982.

Continued Canadian participation in such shows as the Porto Alegre Livestock show as well as regional livestock shows and perhaps seminars using Canadian technical personnel to advise Brazilians on new trends in swine breeding. Follow-up with contacts garnered at previous shows should reinforce previous efforts.

A key element to future Canadian success in the semen sector will be the strengthening of the Semex and Semaltex distribution networks. Continuing publicity on behalf of both organizations by the Canadian missions and support where appropriate for such things as technical seminars would serve to assist the dynamic marketing of both firms. As well, post assistance will be provided in helping to resolve bureaucratic difficulties at customs when these arise. However, the Canadian semen industry's marketing plan is such as to require only occasional assistance on the government's part.

Brazil requires vaccination for brucellosis and a period of quarantine for Canadian sheep. This is not required for Argentine or French animals for example. Agriculture Canada has been asked to take this matter up during the next round of consultations with the Brazilian Ministry of Agriculture as this quarantine period represents an added cost for Brazilian purchasers of Canadian animals.

One component of the Canadian sales effort could involve the use of CIDA programs for the training of young Brazilian agronomists at Canadian agricultural schools

such as the University of Guelph and MacDonald College. There have been innumerable requests for such training in the past. A concerted effort on the part of the Canadian livestock industry, CIDA and the Canadian agricultural colleges to provide a program of scholarships and bursaries in agricultural sciences would yield great benefits to the Canadian exporting community.

Finally, greater use of the Agricultural Sub-Group of the Joint Economic Committee as a forum to promote commercial interests, in line with Brazil's developmental goals, should support increased agricultural sales.

## MINERALS

### The Opportunity

Opportunities to export minerals into Brazil exist, particularly in the short run. The country has a substantial deficit in mineral trade, that reached U.S.\$5.6 billion in 1979, owing to petroleum imports. Excluding petroleum and natural gas, total mineral imports in 1979 amounted to U.S. \$768 million, up from U.S.\$482 million in 1977 and U.S.\$556 million in 1978.

Canada's export opportunities in this sector have been greatest recently in the areas of coal and aluminum. Zinc and asbestos sales are also significant. In 1980 Canadian sales of copper and copper alloys were also significant at Cdn.\$26 million. Prospects for future metallic mineral exports are limited to aluminum, copper, zinc, lead and nickel owing to Brazilian capabilities and the pace of investment in many areas to reduce existing import levels. In 1980 imports of these minerals amounted to U.S.\$664 million with a Canadian share of 11 per cent.

Canadian exports of non-metallic minerals, however, such as metallurgical coal and asbestos will continue to find a receptive market in Brazil for some time to come. Metallurgical coal in particular is in high demand. Canadian coal exports from both Eastern and Western Canada of Cdn.\$38 million represented 14 per cent of the Brazilian import market. Because Brazilian coal deposits are not of sufficient calibre, coking coal for steelmaking must be imported. Since the Brazilian steel industry as of 1980 ranked tenth in the world in terms of volume of production, immediately behind Canada, the market for coking coal is substantial. Similarly, the demand for asbestos, which can be expected to increase in line with the high rates of Brazilian industrial expansion, will need to be met from imports. Since Canada is the principal supplier of asbestos to the world market and possesses abundant coal resources as well, a clear opportunity exists for increased export sales in these products to Brazil.

As is the policy for other sectors of the economy, the Brazilian Government in the minerals sector is striving to reduce imports through the development of domestic resources and to encourage the export of all production that is surplus to domestic needs. As a major component of this policy, Brazil is attempting to attract foreign capital (at present in very short supply in the country), expertise and technology into minerals extraction and processing activities. By 1977 out of 3,814 companies operating in various minerals sectors, 1,500 were connected with well-known multinational firms. In each case, the foreign based firm was participating in a specific mineral project under either joint venture arrangements controlled by the Brazilian partner or under licensing agreements to provide expertise, capital or technology.



Particular target activities for foreign firms as far as Brazilian authorities are concerned include the important Amazonian mineral projects of Carajas, Trombetas, Paramoginas, Alm  irim, Alunorte and Albras as well as arrangements to invest and/or develop parallel hydro-electric, railway, waterway, port and road construction to facilitate mineral exploration, extraction and processing. The Grand Carajas project alone is estimated to require in total U.S.\$61 billion, a figure far in excess of available domestic savings. The integrated mining/metallurgical/industrial/agricultural project is envisaged to encompass a large part of the eastern Amazon region and will include mining and processing of iron ore, gold, copper, tin, manganese, nickel, bauxite, alumina and aluminum.

Activity in the Carajas region, primarily by foreign companies, began during the 1960s. However, foreign interest appears to have declined so that Companhia Vale do Rio Doce (CVRD), Brazil's second largest corporation, now holds or controls a great deal of the mineral resources in the area. There are unconfirmed reports that the government, in seeking foreign investment, is prepared to cede mineral rights to multinational mining companies.

#### Canadian Industry

The Canadian minerals and metals industry is well recognized in the areas of ferrous, non-ferrous and industrial minerals. In steel, virtually all products are produced in Canada with the exception of certain high alloy steels. Similarly a wide range of non-ferrous commodities are mined in Canada and sold both at the concentrate and metal stages. Most industrial minerals that are produced are low-valued, bulk commodities that cannot be shipped too far because of the high cost of transportation relative to the price of the product. Exceptions are metallurgical and thermal coal and asbestos.

Canadian metals and minerals mining and processing corporations -- such companies as Alcan, Cominco, Noranda, Hudson Bay, Teck and Sheritt Gordon -- are amongst the most advanced in the world in the areas of exploration, mining and processing technology, and in international marketing. There are many smaller companies engaged in overseas exploration and mining operations. Also, Canadian consulting firms are highly regarded in all activities from exploration to the processing of metal. The degree of Canadian ownership in this area is fairly high.



In steel, the Canadian industry is well developed and internationally competitive. Most steel-making capacity is located in central Canada, principally in Ontario where Stelco, Dofasco and Algoma are located. These three integrated companies account for 75 per cent of Canadian capacity and produce the greatest variety of products, including semis, rods, rails, structural shapes, plate and sheet. The non-integrated producers, utilizing electric furnaces, operate in seven provinces across Canada and have concentrated principally on rod, pipe and bar products. The industry is primarily owned by Canadian shareholders. Foreign ownership is insignificant.

Canada is the leading producer of asbestos in the world with the bulk of production located in Quebec. Canadian producers market worldwide and have been selling to Brazil for some time. Since the early 1970s Canada has become a major exporter of metallurgical coal, principally from new mines located in British Columbia and Alberta. Originally developed as a result of contracts with Japanese steelmakers, Canadian producers have diversified somewhat in recent years and Brazil has become one of these new developing markets. Devco in Cape Breton is also interested in exporting to the Brazilian market.

#### Recent Canadian Marketing Activity

Canadian non-ferrous mining companies such as Alcan, Noranda, Cominco, Inco, and Falconbridge have been active in Brazil. Alcan has had a presence in Brazil for more than 50 years and now has Brazilian assets in excess of U.S.\$400 million. Operating through Alcan Alumínio and Alumínio do Brasil Nordeste, both 100 per cent owned by Alcan, and through Minerácio Rio do Norte, 19 per cent controlled by Alcan, and Petrocoque, 25 per cent owned by Alcan, the company is currently engaged in bauxite mining, aluminum production and some aluminum fabrication in Brazil.

Cominco and Falconbridge carry out some mineral exploration activity. Noranda is involved in exploration and in developing a major copper deposit and establishing smelting and refining facilities. Inco is in control of a valuable nickel deposit at Barro Alto but has not yet begun extraction operations.

In the steel sector, Brazil is selling iron ore and some steel to Canada at this time. A visit to Canada to promote Brazilian steel and greater reciprocity in Brazil-Canada trade was made by the president of SIDERBRAS, the government-owned steel holding company, in 1980. On that occasion the

Brazilians also sought to promote steel company managerial exchanges between the two countries. Return visits to Brazil by officials of the Canadian steel companies, steel service centres and from Canadian structural steel fabricating companies are presently being considered.

Among non-petroleum suppliers, Canada ranked in 1979 as Brazil's third largest supplier of minerals and mining goods, behind the United States and West Germany. In 1980 Canada ranked first as a source of Brazilian imports of sulphur, asbestos fibre, and asbestos powder. In all three cases the share of the market had increased by roughly 10 percentage points over 1979. Canada's exports of metallurgical coal in 1980 amounted to U.S.\$32 million, for a 13.3 per cent share of all Brazilian imports, up U.S.\$6 million and 4 percentage points over 1979 sales. Sales of copper bars rose to U.S.\$23 million in 1980 from insignificant levels a year earlier for a 6.5 per cent import market share. Significant sales of aluminum metal (U.S.\$17 million for a 21 per cent share of total 1980 imports) and aluminum alloys (U.S.\$10.5 million or 58 per cent of total imports in that category) were also achieved by Canadian suppliers in 1980.

#### Market Considerations

Brazil is attempting to lower its dependence on imports and control its balance of payments problems. One of the instruments being used to accomplish this is a requirement for prior authorization of the respective sectoral development agencies for imports of iron and steel and non-ferrous metals. This provision covers a large part of the Canadian trade and potential trade in the minerals and metals sector.

Another significant trade consideration is the preferential treatment afforded member nations of the Latin American Association for Integrated Development, ALADI. As well as facing lower customs duties, exports of many ALADI states, particularly those with direct access to the Atlantic Ocean, are in a preferred position because geographical proximity reduces freight costs and facilitates communications. Consequently, it is not surprising that Brazil imports large quantities of copper from Peru and Chile, zinc from Mexico and Peru and aluminum from Guyana, Surinam and Venezuela.

The interest of Canadian mining firms in investing in Brazilian mineral development is tempered by the terms and conditions of the Brazilian Mining Law. Although exploration permits are readily granted, the work required by the Brazilians is very detailed and expensive. As well, the

requirements for a production concession are also onerous and concessions may be withdrawn if development does not proceed according to the original timetable of the company.

Another market consideration for Canadian companies interested in joint ventures or licensing in Brazil is the fact that, while Canadian mining and process technology and steelmaking technology and expertise in these industries is in high demand in that country, the Brazilian Government has placed restrictions on payment for foreign technology by Brazilian firms. As well, the original ownership rights of such technology under Brazilian law can not be fully guaranteed. Brazil employs a system of escalating taxes on remittances of profits out of the country.

Very clearly an important requirement for the association of Canadian firms with Brazilian joint venture partners can be the Canadian company's capability to invest and/or assist in financing part of the local undertaking. Financing for major projects may be arranged with multilateral development banks such as the IADB or IBRD, or by bilateral buyer credit agencies such as EDC.

Canadian exporters are at a transportation disadvantage particularly in the non-ferrous metals area. The major supplier of molybdenum is Chile. South Africa, Australia and the United States supply nickel in large quantities and Peru and Chile export copper to Brazil. One advantage for Canadian companies, however, particularly when competing for direct investment opportunities, is the favourable image of Canadian investors that has emerged in Brazil as a result of the past operation of such companies as Alcan, Brascan and Massey Ferguson.

#### Competition and Competitor Activity

In those areas of Canadian export strength to Brazil, sulphur, asbestos fibre and powder, lead, metallurgical coal, copper and aluminum, Canada's sales to Brazil amounted to U.S.\$157.2 million in 1980. Other leading exporters to Brazil in the same minerals were the U.S. with U.S.\$247.4 million in sales and Chile with \$241.3 million. The next largest competitor in terms of sales to Brazil in 1980 was Peru with U.S.\$67.6 million worth of imports in those commodities listed above. In fact, Chilean and Peruvian exports were primarily copper. Poland's coal exports to Brazil were substantial at U.S.\$49 million in 1980 and South Africa provided U.S.\$7.2 million in lead and U.S.\$18.2 million in copper. But only the United States provided consistent competition to Canada in all of these minerals, obtaining a 13.7 per cent share of total

Brazilian sulphur imports, 3 per cent of asbestos imports, 30 per cent of lead imports, 65.2 per cent of metallurgical coal imports, 2 per cent of copper imports, and 53 per cent of all aluminum imports. Poland's present domestic and economic problems may open its share of the Brazilian coal market to other competitors.

### Action Plan

The general prospects for selling Canadian mineral and metals products in Brazil lie mainly with asbestos and metallurgical coal. Marketing efforts by companies involved in these two commodities have been excellent. There appear to be some prospects for sales of certain steel products, particularly relating to steel service centres and fabricated structural steel firms. Certainly opportunities exist for technology transfer and consulting expertise. In these areas government to government consultations and missions to Brazil would seem to have merit. Continued efforts in identifying particular opportunities would be useful. Although there will be no funded fairs or missions in 1982/83, specific examples of possible actions in future years include:

#### Method

#### Subjects

Government-to-government consultations

- Technology transfer (problems and opportunities)
- Canadian-Brazilian joint ventures in the mineral and metals field

Missions

- Steel products and services (steel service centres and fabricated structural producers)
- Consulting services

#### Method

#### Subjects

Trade shows in Brazil or South America

- Promotion of Canadian expertise and abilities in mine development and processing, and steel-making.

Market surveys regarding selected commodities

- Continued efforts to identify products that are in short supply or not being produced, thus identifying particular marketing opportunities in Brazil.

## TABLES AND FIGURES





BRAZIL FACT SHEET

Personal requirements for Canadians: visa - tourist visa not required; inoculation - smallpox.

Area: 8.5 million square kilometres (3,289,440 square miles)

Population: estimated 1980, 120 million

Climate: tropical in the north, subtropical in the centre, temperate in the south.

Language: Portuguese; sales literature in Spanish is not acceptable.

Capital: Brasilia

Marketing centres: Sao Paulo, Rio de Janeiro, Belo Horizonte, Recife, Salvador, Fortaleza, Belem

Currency: Cruzeiro. Brazil follows a "crawling peg" system of currency devaluation resulting in frequent changes in its exchange rate.

Gross Domestic Product: 1980, U.S.\$237 billion; per capita \$1,988.

Taxes: All goods are assessed a federal excise tax (IPI) at various rates (generally 8 to 10 per cent) and state sales tax (ICM) at rates of from 11 to 14 per cent.

Samples: Importation restricted if of commercial value.

Weights and measures: metric system.

Screw thread: North American SAE, left hand.

Political: Federal Republic of 22 states, four territories and one federal district (Brasilia).

President: Joao Baptista Figueiredo.

Annual rate of inflation: 110 per cent in 1980, using Consumer Price Index

Motor vehicle registration: 1975, 4,907,000

TABLE 2

SELECTED BRAZILIAN AGENCIES AND CORPORATIONS

BNDE	National Economic Development Bank
BNH	National Housing Bank
BRASPETRO	Subsidiary of Petrobras for oil exploration outside of Brazil
CACEX	Foreign Trade Department Bank of Brazil - issues import licences - subordinate to CONCEX - all exporters and importers must be officially registered with CACEX
CIP	Interministerial Price Council
CONCEX	The National Foreign Trade Policy Commission - formulates and administers foreign trade strategy
CPA	Customs Policy Council - fixes duty levels
CPRM	Companhia Pesquisa de Recursos Minerais - 51 per cent state-controlled company for mining exploration
CVRD	Companhia Vale do Rio Doce, exporter of iron ore, has more than 20 subsidiaries
ELETROBRAS	Government electrical monopoly
EMBRAER	Empresa Brasileira de Aeronautica SA
EMBRATEL	Government communications monopoly
INTERBRAS	Trading company created by Petrobras
PETROBRAS	State oil company
PETROQUISA	Petrobras subsidiary -- chemicals
SUDAM	Superintendencia de Desenvolvimento do Amazonia - the development agency for the Amazon Region
SUDENE	Superintendencia de Desenvolvimento do Nordeste - the development agency for the Northeast Region
SUDEPE	Superintendencia de Desenvolvimento du Pesca - the development agency for the fishing industry
SUNAB	National Supply Commission
TELEBRAS	Government telephone monopoly

TABLE 3

BRAZIL'S GROSS DOMESTIC PRODUCT  
AND POPULATION

Total and per capita figures (1967-81)

	GDPl in (U.S. \$ millions)	Growth %	Population (thousands)	Per-Capita Income <sup>1</sup>
1967	32,363	4.8	85,748	378
1968	36,075	11.2	88,222	409
1969	39,766	10.0	90,768	438
1970	45,391	8.8	93,387	486
1971	52,356	13.3	95,993	545
1972	61,201	11.7	98,690	620
1973	81,343	14.0	101,433	802
1974	105,968	9.8	104,243	1,017
1975	124,201	5.6	107,145	1,159
1976	146,189	9.0	110,124	1,326
1977	164,163	4.7	113,209	1,450
1978	188,628	6.0	116,393	1,621
1979	205,521	6.4	119,670	1,717
1980	221,730	7.9	119,670	1,853
1981	213,600	-3.66	119,670	1,785

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<sup>1</sup> Based on average exchange rate for the year.

Source: Central Bank of Brazil.

TABLE 4

PRODUCTION OF BASIC RAW MATERIALS  
(in thousands of tons)

	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	Growth 1970/80
Iron ore	71,113	87,341	100,000	100,200	61,070	69,318	84,000	119.0
Steel ingots	7,507	8,308	9,169	11,164	12,120	13,783	15,300	184.0
Cement	14,920	16,737	19,147	21,123	23,839	24,824	27,200	202.0
Fertilizers	538	705	1,047	1,290	1,897	2,955	4,232	2,127.0
Paper and board	1,854	1,688	1,316	1,410	2,500	2,820	3,400	209.0
Aluminum	114	121	139	152	222	238	227	306.0
Caustic soda	367	389	397	458	717	645	666	152.0
Synthetic elastomers	155	129	164	188	203	219	223	205.0
Chlorine	191	212	208	310	404	587	627	371.0
Ethylene	27	195	343	352	378	638	745	2,158.0
Thermoplastic resins	158	211	264	548	614	834	985	875.0
Sulphuric acid	1,117	1,131	1,491	1,747	1,924	243	2,430	333.0
Installed generating capacity (MW)	16,900	19,600	21,800	23,070	25,400	28,750	31,733	183.0

Sources: Ministry of Industry and Commerce, Central Bank of Brazil, CNP (National Petroleum Council)



TABLE 5

## PRODUCTION OF MANUFACTURED GOODS

	1970	1974	1975	1976	1977	1978	1979	1980	Growth 1970/80 (%)
Automobiles (1,000 units)	374.0	817.0	841.0	889.0	804.0	954.0	1,006.6	1,165.2	211.6
Trucks and buses (1,000 units)	42.0	88.0	89.0	96.0	115.0	109.0	106.9	116.5	177.4
Tractors (1,000 units)	17.0	53.0	65.0	72.0	58.0	55.0	63.8	70.0	311.8
Ships (1,000 DWT)	2,078.0	4,109.0	4,604.0	5,097.0	5,612.0	6,175.0	7,200.0	8,069.0	288.3
Aircraft (units)	80.0	174.0	304.0	518.0	550.0	212.0	279.0	418.0	422.5

- 87 -

Source: Central Bank of Brazil and the Ministry of Industry and Commerce

**TABLE 6**

**BRAZIL: IMPORTS BY PRINCIPAL CATEGORIES**

	1976	1977	1978	1979	1980
(in billions of U.S.\$)					
<u>Total imports, f.o.b.</u>	<u>12.38</u>	<u>12.02</u>	<u>13.68</u>	<u>18.08</u>	<u>22.96</u>
<u>Machinery and equipment</u>	<u>3.90</u>	<u>3.40</u>	<u>3.90</u>	<u>4.20</u>	<u>4.81</u>
Mechanical equipment	2.11	1.73	1.98	2.27	2.38
Electrical equipment	0.93	0.84	0.91	1.04	1.16
Transport equipment	0.58	0.53	0.66	0.46	0.84
Optical equip. & instruments	0.28	0.30	0.35	0.43	0.43
<u>Chemicals, plastics &amp; rubber</u>	<u>1.45</u>	<u>1.48</u>	<u>1.68</u>	<u>2.18</u>	<u>2.77</u>
Fertilizers	0.20	0.30	0.31	0.42	0.62
Organic chemicals	0.71	0.64	0.73	0.94	1.11
Inorganic chemicals	0.24	0.25	0.30	0.40	0.50
Plastics	0.21	0.18	0.20	0.25	0.24
Rubber	0.09	0.11	0.14	0.17	0.21
<u>Paper &amp; paper products</u>	<u>0.14</u>	<u>0.14</u>	<u>0.14</u>	<u>0.17</u>	<u>0.16</u>
<u>Fuels and lubricants</u>	<u>3.84</u>	<u>4.03</u>	<u>4.43</u>	<u>6.71</u>	<u>10.21</u>
Crude oil	3.35	3.60	4.06	6.19	9.37
Other petroleum products	0.26	0.21	0.14	0.21	0.53
Coal and coke	0.20	0.22	0.23	0.31	0.31
<u>Base metals &amp; metal products</u>	<u>1.00</u>	<u>1.08</u>	<u>0.91</u>	<u>1.16</u>	<u>1.41</u>
Iron and steel	0.58	0.58	0.48	0.49	0.59
Non-ferrous metals	0.42	0.50	0.43	0.67	0.82
<u>Textiles &amp; textile products</u>	<u>0.11</u>	<u>0.09</u>	<u>0.09</u>	<u>0.10</u>	<u>0.68</u>
<u>Food, beverages &amp; tobacco</u>	<u>0.55</u>	<u>0.30</u>	<u>0.74</u>	<u>1.06</u>	<u>1.84</u>
Beef & other meats	0.02	0.02	0.04	0.07	0.60
Cereals	0.53	0.28	0.70	0.99	1.24
<u>Other imports</u>	<u>1.39</u>	<u>1.50</u>	<u>1.78</u>	<u>2.50</u>	<u>1.08</u>
(percentage changes)					
Total imports	1.4	-2.9	13.8	32.3	27.0
Petroleum products	23.8	5.0	10.0	51.0	52.0
Imports of non-pet. prod.	-7.0	-6.0	15.0	24.0	12.3
Food products	-29.5	-45.0	147.0	43.0	74.0
Others	45.0	8.0	18.7	40.4	-57.0

Source: Central Bank of Brazil

TABLE 7

FOREIGN INVESTMENT IN BRAZIL

	31/12/79		31/12/80	
	<u>U.S.\$ millions</u>	<u>%</u>	<u>U.S.\$ millions</u>	<u>%</u>
TOTAL	15,963	100.0	17,480	100.0
LAFTA	77	0.5	62	0.4
UNITED STATES	4,375	27.4	5,007	28.6
CANADA	625	3.9	641	3.7
EEC	5,282	33.0	5,776	33.1
West Germany	2,463	15.4	2,448	14.0
Belgium	249	1.6	241	1.3
Denmark	30	0.2	29	0.2
Luxembourg	360	2.2	405	2.3
France	676	4.2	702	4.1
Italy	217	1.3	478	2.7
The Netherlands	350	2.2	362	2.0
United Kingdom	937	5.9	1,111	6.3
EFTA	2,394	15.0	2,278	13.0
Austria	14	0.1	15	0.1
Norway	31	0.2	35	0.2
Portugal	49	0.3	47	0.3
Sweden	379	2.4	413	2.4
Switzerland	1,921	12.0	1,768	10.1
JAPAN	1,518	9.5	1,724	9.8
OTHER COUNTRIES	1,712	10.7	1,992	11.4

Source: Central Bank of Brazil

TABLE 8

CANADA-BRAZIL TRADE: STATISTICAL SUMMARY

(Cdn. \$ millions)

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Canadian exports to Brazil	48.2	50.2	87.38	92.53	86.23	111.32	393.39	194.47	324.4	275.6	415.8	418.6	893.3
Canadian imports from Brazil	38.7	42.1	49.31	40.71	61.70	87.07	112.22	170.21	162.6	214.0	248.3	313.1	347.1
Balance	9.5	8.1	38.07	41.82	24.53	24.25	281.17	24.26	161.8	61.6	167.5	105.5	546.2

Source: Statistics Canada

**TABLE 9**  
**MAIN CANADIAN EXPORTS TO BRAZIL**

COMMODITIES	(Cdn.\$ '000's)			
	1977	1978	1979	1980
Wheat	100,340	189,664	85,559	403,720
Newsprint paper	32,712	29,544	40,246	54,792
Fertilizers and fertilizer materials	22,317	21,119	40,117	81,833
Petroleum and coal products	-	49	6,759	38,939
Drilling, excavating, mining machinery	14,070	2,994	1,673	6,192
Aircraft engines and parts	10,933	11,964	17,060	32,117
Sulphur	10,756	12,874	17,025	58,865
Asbestos unmanufactured	10,095	13,384	9,256	3,048
Coal and other crude bituminous substances	9,597	31,746	25,365	38,131
Aluminum including alloys	9,402	22,161	18,535	26,795
Zinc	-	8,544	16,660	16,740
Electric lighting and distribution equipment	7,208	6,313	6,817	9,361
Plate sheet and strip, steel	6,560	807	299	651
Motor vehicle engines and parts	6,703	4,593	11,780	5,467
Nickel and alloys	4,872	3,631	3,204	7,336
Office machines and equipment	4,227	5,570	4,696	6,715
Motor vehicle parts and accessories, NES	3,064	5,674	11,147	8,363
Copper and alloys	2,502	1,359	1,075	25,967
Precious metals, including alloys	102	6,260	30,790	1,044
Rapeseed	16	1	32,201	-
Total main commodities	255,476	378,251	380,264	826,076
Total all commodities	275,647	415,784	418,560	893,225
Main as per cent of total	92.7	91.0	90.9	92.5

Source: Statistics Canada



TABLE 10

MAIN CANADIAN IMPORTS FROM BRAZIL

COMMODITIES	(Cdn.\$ '000's)			
	1977	1978	1979	1980
Coffee	49,242	55,323	43,179	56,185
Motor vehicle engines	35,439	6,785	40,796	44,020
Cocoa and chocolate	18,885	22,992	25,257	20,340
Other iron steel and alloys	15,200	11,416	13,119	12,762
Orange juice and concentrates	14,641	46,201	43,532	38,909
Iron ores	10,412	10,655	25,482	7,417
Footwear	8,920	12,808	14,014	21,570
Bauxite	-	-	7,458	40,772
Cordage twine and ropes	5,880	4,406	5,984	11,188
Cotton yarn and thread	5,652	7,213	3,971	1,485
Tin, including alloys	4,762	5,847	1,181	5,552
Lumber	4,558	6,295	5,632	9,509
Other meat and meat preparations	4,308	3,637	2,260	5,098
Passenger car tires	942	2,570	3,053	4,306
Nuts except oil nuts	3,211	3,224	3,527	5,384
Electronic computers	3,010	6,527	68	210
Leather and leather fabricated materials	2,903	4,226	10,110	1,504
Other metals in ores, concentrates, scrap	147	6,415	1,832	2,977
Steel products	59	446	17,785	13,014
Total main commodities	188,171	216,986	268,240	302,202
Total all commodities	213,995	248,287	313,102	347,772
Main as per cent of total	87.9	87.4	85.7	86.9

Source: Statistics Canada

TABLE 11

FEDERAL GOVERNMENT SUPPORTED PROMOTIONAL PROJECTS -- BRAZIL  
(FY 1977/78 - 1981/82)

Trade Fair/Exhibitions

- 1980/81 - International Animal Fair of Rio Grande do Sul, Porto Alegre
  - Intelcom '80, Rio de Janeiro
  - First International Agriculture and Food Fair (under PEMD)
  - Latin America Oil Show, Rio de Janeiro
  - Curitiba Livestock Show
- 1979/80 - Nil
- 1978/79 - Energy '78, Sao Paulo
  - Offshore Brazil, Rio de Janeiro (Info Booth)
  - World Poultry Congress, Sao Paulo
  - International Livestock Show
- 1977/78 - International Maritime Exhibition, Rio de Janeiro (Info Booth)
  - 4th International Animal Fair of Rio Grande do Sul, Porto Alegre

Missions

- 1981/82 - In: Salted Fish Mission from Brazil
- 1980/81 - In: Seed Potato Mission from Brazil
- 1979/80 - In: Swine Mission from Brazil
  - Naval Equipment Mission from Brazil
- 1978/79 - Out: Pulp and Paper Industry Mission to South America
  - Processed Fish Products Mission to Caribbean and Latin America
  - Milk Powder Mission to Caribbean and Latin America

Buyers

- 1980/81 - Communications equipment buyers from Brazil (TELESP)
  - Cattle and animal semen buyer from Brazil
- 1978/79 - Aerospace buyers from Brazil
  - Urban transportation buyers from Brazil (1)
  - Urban transportation buyers from Brazil (2)
  - Cattle buyers from Santa Catarina

(Cont'd.)

TABLE 11 (cont'd)

FEDERAL GOVERNMENT SUPPORTED PROMOTIONAL PROJECTS -- BRAZIL  
(FY 1977/78 - 1981/82)

Buyers (cont'd)

- 1977/78 - Petrobras buyers from Brazil
  - Cattle buyers from Brazil
  - Holstein cattle buyers from Brazil

Delegations

- 1981/82 - Minister of State for Trade, Hon. Ed Lumley, to Brazil
  - Seed potato delegation from Brazil
  - Economic delegation from State of Sao Paulo
- 1980/81 - Urban transit delegation from Brazil
  - Coal and steel delegation from Brazil
  - Cattle judge to BADE, Agricultural Show in Brazil
- 1979/80 - Air traffic control equipment delegation from Brazil
  - Urban transportation delegation from Brazil
  - Dairy cattle delegation from Brazil
  - Cattle judge to Curitiba National Show in Brazil
- 1978/79 - Holstein judge to Brazil (Belo Horizonte, Minas Gerais)
  - Ocean industries delegation from Brazil
  - Economic development delegation from Brazil
  - Metallurgical coal delegation from Brazil
  - Urban transit delegation from Brasilia (EBTU)
  - Forestry and fisheries project delegation from State of Maranhao

TABLE 12

CANADIAN INTERNATIONAL DEVELOPMENT AGENCY (CIDA)  
INDUSTRIAL CO-OPERATION PROGRAM

BRAZIL

I VISITS, SEMINARS

CANGUARD CONSULTING LTD.  
Brazilian environment protection mission

II PROJECT SUPPORT

REID, COLLINS & ASSOCIATES LTD.  
Tucurui Forest resources study and development

III CANADIAN PROJECT PREPARATION FACILITY (CPPF)

CANGUARD CONSULTING LTD.  
Environmental control of the Sao Paulo coastline

IV STARTER STUDY

THOMPSON, GORDON LTD.  
Bearing production

URBAN TRANSPORT DEVELOPMENT CORPORATION  
Urban transportation

HOWE INTERNATIONAL LTD.  
Feed mill construction venture

THE ELECTROLYSER CORPORATION LTD.  
Hydrogen plants

LA VERENDRYE HELICOPTERS INC.  
Helicopter services

OMNIFUEL GASIFICATION  
Licensing gasification technology

KENHAR PRODUCTS INC.  
Lift truck forks

BOMBARDIER INC.  
Rebuilding of locomotives for RFFSA

V VIABILITY STUDY

LA VERENDRYE HELICOPTERS INC.  
Helicopter services

TABLE 13

BRAZILIAN CONSTRUCTION COMPANIES OPERATING OVERSEAS

Diretor  
Construtora Alcindo Vieira-CONVAP S.A.  
Rua Coitacasses, 14-13º andar (Centro)  
30.000 Belo Horizonte-MG-Brazil

Diretor  
Construtora Baptista Fontenelle Ltda.  
Rua Professor Antonio Aleixo, 531-Sala 1324  
30.000 Belo Horizonte-MG-Brazil

Diretor  
Construtora Martins & Klein Ltda.  
Rua Rio de Janeiro, 1994  
30.000 Belo Horizonte-MG-Brazil

Diretor  
Construtora Sant'Anna S.A.  
Rua Grao Mogol, 404 (Carmo)  
30.000 Belo Horizonte-MG-Brazil

Diretor  
Construtora Norberto  
Oderbrecht S.A.  
Ed. Linhares, 103  
30.000 Belo Horizonte-MG-Brazil

Diretor  
Sentenco Engenkaria S.A.  
Rua Maria Paula 36-ZC-3  
CEP 01319, Sao Paulo, S.P.

Diretor  
Construtora Andrade Gutierrez S.A.  
Rua dos Pampas, 484  
30.000 Belo Horizonte-MG-Brazil

Diretor  
Construtora Brazil Central S.A.  
Rua Sao Paulo, 638-12º andar-Sala 1210  
30.000 Belo Horizonte-MG-Brazil

Diretor  
Construtora Mendes Junior S.A.  
Avenida Joao Pinheiro, 146  
30.000 Belo Horizonte-MG-Brazil

Diretor  
Construtora Tratex S.A.  
Avenida Guaicui, 43  
Coracao de Jesus  
30.000 Belo Horizonte-MG-Brazil

Diretor  
Construcoes e Comercio  
Camargo Correa S.A.  
Avenida Francisco Sa, 281  
30.000 Belo Horizonte-MG-Brazil



TABLE 14

USEFUL CONTACTS

**A. IN CANADA**

Department of External Affairs  
Latin America Division  
Trade Development  
125 Sussex Drive  
Ottawa, Ontario  
K1A 0G2

Brazil-Canada Chamber of Commerce  
Suite 307  
11 Adelaide Street West  
Toronto, Ontario  
M5H 1L9

Embassy of Brazil  
255 Albert Street, Suite 900  
Ottawa, Ontario  
K1P 6A9

Canadian Association --  
Latin America and Caribbean  
42 Charles Street East  
Toronto, Ontario  
M4Y 1T4

Consulate of Brazil  
1 Place Ville Marie, Suite 1505  
Montreal, Quebec  
H3B 2B5

Provincial government trade and  
industry departments

Consulate of Brazil  
130 Bloor Street West, Suite 616  
Toronto, Ontario  
M5S 1N5

Export Development Corporation  
South America East  
110 O'Connor Street  
Ottawa, Ontario  
K1P 5T9

**B. IN BRAZIL**

Canadian Embassy  
Commercial Division  
Caixa Postal 07 0961  
SES-Av. das Nacoes, lote 16  
70,000 Brasília, D.F. Brazil

Câmara de Comércio Brasil Canada  
Av. Pref. Faria Lima, 1058  
Conjunto 42-01452  
Sao Paulo - S.P.

Canadian Consulate General  
Caixa Postal 2164, ZC.00  
Edificio Metropole  
Avenida Presidente Wilson  
165/6<sup>o</sup> andar  
20,000 Rio de Janeiro - RJ - Brazil

Canadian Consulate General  
Caixa Postal 22002  
Edificio Top Centre  
Avenida Paulista, 854 5<sup>o</sup> andar  
Sao Paulo, Brazil

TABLE 14 (Cont'd)

CANADIAN REGIONAL OFFICES

NEWFOUNDLAND REGION

P.O. Box 64  
Atlantic Place  
Suite 702  
215 Water Street  
St. John's, Newfoundland  
A1C 6C9

ONTARIO REGION

1 First Canadian Place  
Suite 4840, P.O. Box 98  
Toronto, Ontario  
M5X 1B1

PRINCE EDWARD ISLAND REGION

Dominion Building  
97 Queen Street, P.O. Box 2289  
Charlottetown, Prince Edward Island  
C1A 8C1

MANITOBA REGION

507 Manulife House  
386 Broadway Avenue  
Winnipeg, Manitoba  
R3C 3R6

NOVA SCOTIA REGION

Suite 1124, Duke Tower  
5251 Duke Street  
Scotia Square  
Halifax, Nova Scotia  
B3J 1P3

SASKATCHEWAN REGION

980 - 2002 Victoria Avenue  
Regina, Saskatchewan  
S4P 0R7

NEW BRUNSWICK REGION

Suite 642  
440 King Street  
Fredericton, New Brunswick  
E3B 5H8

ALBERTA AND NORTHWEST TERRITORIES  
REGION

500 Macdonald Place  
9939 Jasper Avenue  
Edmonton, Alberta  
T5J 2W8

QUEBEC REGION

P.O. Box 1270, Station "B"  
Suite 600, 685 Cathcart Street  
Montreal, Quebec  
H3B 3K9

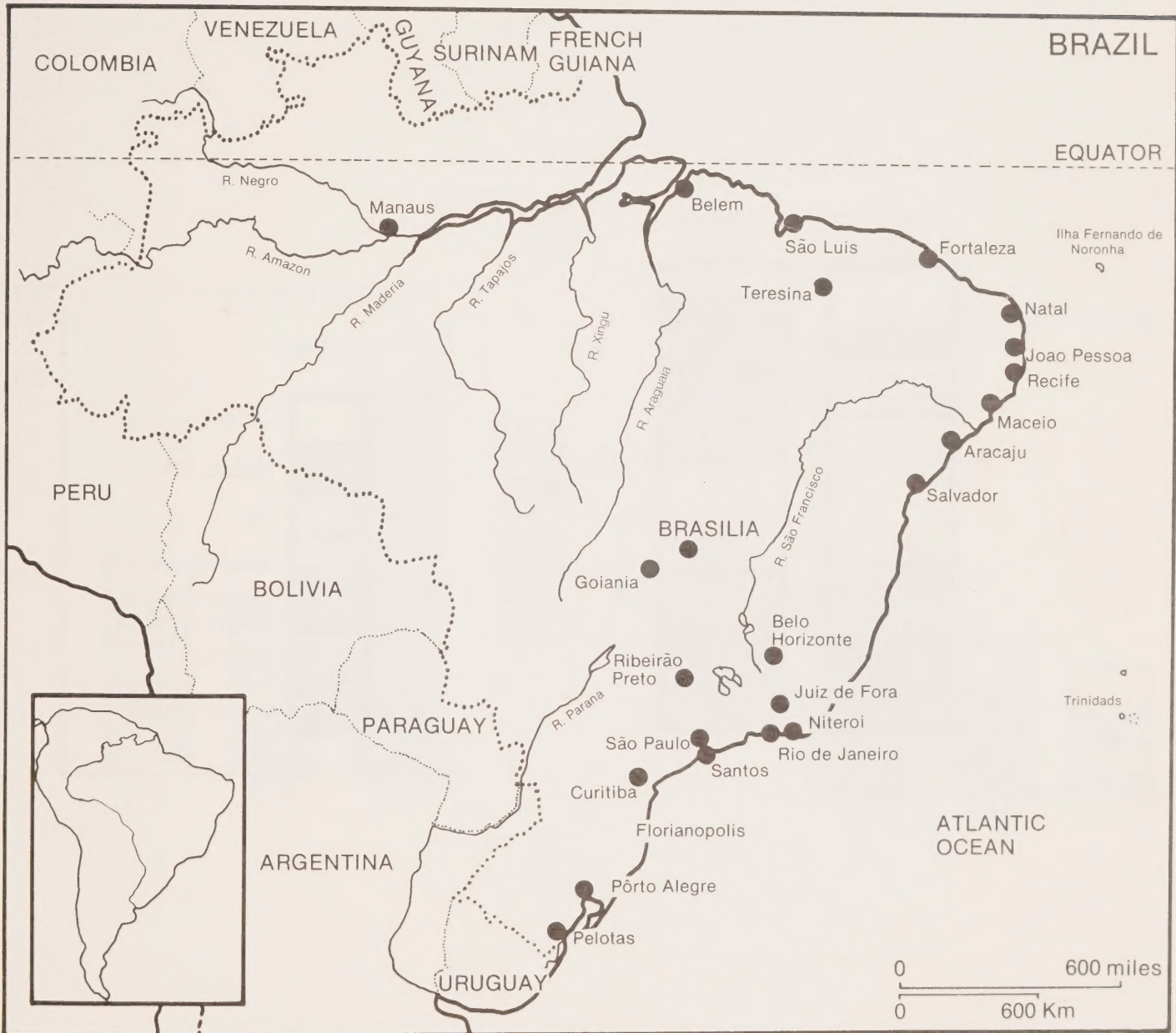
BRITISH COLUMBIA AND YUKON REGION

Suite 2743, P.O. Box 49178  
Bentall Centre, Tower "111"  
595 Burrard Street  
Vancouver, British Columbia  
V7X 1K8

QUEBEC CITY

Suite 620  
2 Place Québec  
Québec City, Québec  
G1R 2B5

FIGURE 1



Source: "Latin America Annual Review and The Caribbean, 1980", published by World of Information, Saffron-Waldon, Essex, England.

FIGURE 2

Brazilian Foreign Trade by Region

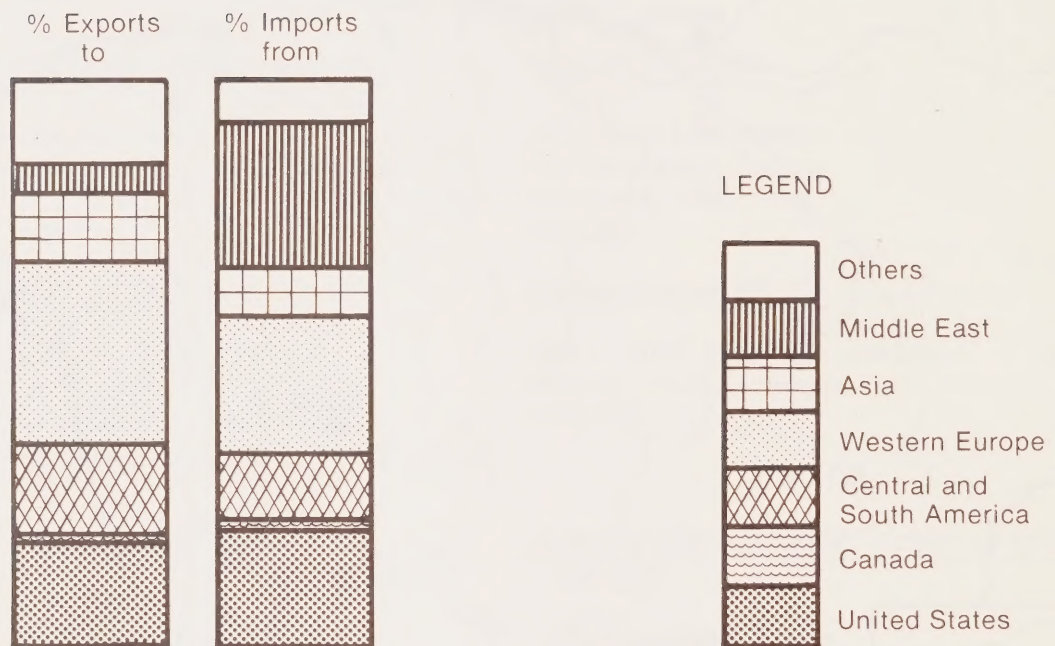
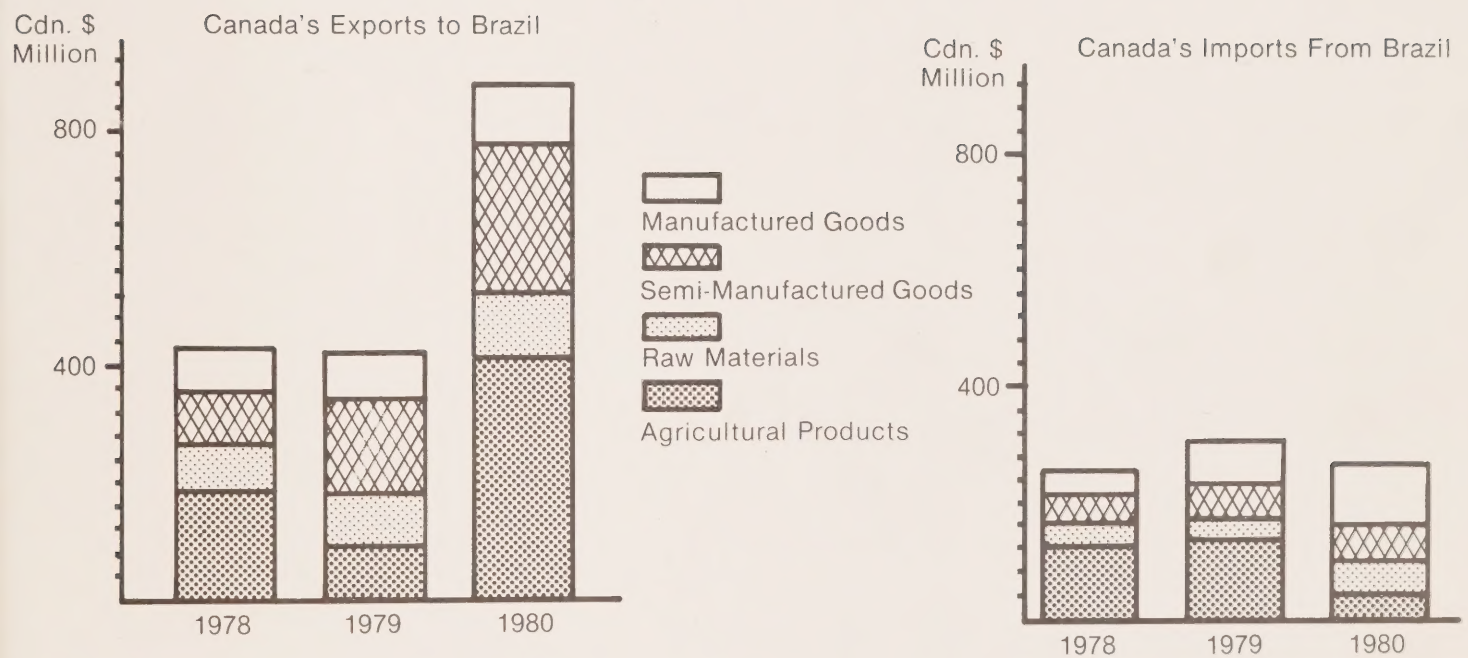




FIGURE 3

CANADA-BRAZIL TRADE





3 1761 11553568 4

